Government
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Ontario, Legislative Assembly

Sessional papers

90

I

SESSIONAL PAPERS.

VOL. XX.—PART VI.

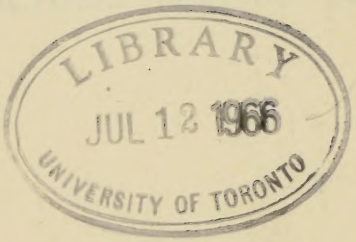
SECOND SESSION OF SIXTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1888.

Toronto:
PRINTED FOR JOHN NOTMAN, QUEEN'S PRINTER,
BY WARWICK & SONS, 68 AND 70 FRONT ST. WEST.
1888.



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Accounts, Public	15	"
Agricultural and Arts, Report	10	"
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Agricultural Societies, Analysis	60	*Not printed.*
Asylums, Report	13	*Printed.*
Bertie, Lots in	63	*Not printed.*
Births, Marriages and Deaths, Report	3	*Printed.*
Blind Institute, Report	6	"
Borron, E. B., Report	1	"
Canada Temperance Act, fines imposed	64	*Not printed.*
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Chatham Collegiate Institute	23	*Not printed.*
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Deaf and Dumb Institute, Report	8	*Printed.*
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Disputed Territory, correspondence	73	*Printed.*
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Drainage Works in Raleigh	62	*Not printed.*
Education, Report of Minister	7	*Printed.*
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Education, publication of Text Books	75	"
Education, Report on French Schools	26	"
Elgin House of Industry, Report	28	*Not printed.*
Entomological Society, Report	21	*Printed.*
Estimates	17	"
Evenden James, bequest of	31	*Not printed.*

Title.	No.	Remarks.
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Fruit Growers, Report	12	"
Gaols and Prisons, Report	11	*Printed.*
Gaols, Lunatics in	43	*Not printed.*
Gaols, persons committed to	51	*Printed.*
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Horticultural Societies, analysis	60	*Not printed.*
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Magdalen Asylums, Report	40	*Printed.*
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No. 2.. Detailed Report of the Inspector of Insurance. (*Printed.*)

No. 3.. Report relating to the registration of Births, Marriages and Deaths in the Province of Ontario, for the year 1886. (*Printed.*)

No. 4.. Report of the Ontario Agricultural and Experimental Union. (*Printed.*)

No. 5.. Forestry Report. (*Printed.*)

No. 6.. Report upon the Ontario Institution for the Education and Instruction of the Blind, Brantford, for the year ending 30th September, 1887. (*Printed.*)

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No. 7.. Report of the Minister of Education, Ontario, for the year 1887, with the Statistics of 1886, in which is included the Reports upon Mechanics' Institutes; Practical Science; Canadian Institute; Toronto University; University College and Upper Canada College. (*Printed.*)

No. 8.. Report upon the Ontario Institution for the Education and Instruction of the Deaf and Dumb, Belleville, for the year ending 30th September, 1887. (*Printed.*)

No. 9.. Report of the Provincial Secretary on the working of the Tavern and Shop License Acts, for the year 1887. (*Printed.*)

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No. 12.. Report of the Fruit Growers' Association of Ontario, for the year 1887. (*Printed.*)

No. 13.. Report upon the Lunatic and Idiot Asylums of Ontario, for the year ending 30th September, 1887. (*Printed.*)

No. 14.. Report of the Librarian, on the state of the Library. (*Printed.*)

No. 15... Public Accounts of the Province, for the year 1887. (*Printed.*)

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No. 16.. Report of the Ontario Agricultural College and Experimental Farm, for the year 1887. (*Printed.*)

No. 17.. Estimates, for the year 1887. (*Printed.*)

No. 18.. Report of the Commissioner of Public Works, for the year 1887. (*Printed.*)

No. 19.. Report of the Department of Immigration, for the year 1887. (*Printed.*)

No. 20.. Report of the Commissioner of Crown Lands, for the year 1887. (*Printed.*)

No. 21.. Report of the Entomological Society, for the year 1887. (*Printed.*)

No. 22.. Copy of an Order in Council, approving of certain regulations respecting the Education Department. (*Not printed.*)

No. 23.. Copy of an Order in Council, raising the High School at the Town of Chatham to the status of a Collegiate Institute. (*Not printed.*)

No. 24.. Copy of an Order in Council, approving of schedules of particulars respecting certain Indentures of Agreement entered into by the Minister of Education with certain publishers in regard to printing, publishing and selling Text Books. (*Printed.*)

No. 25.. Regulations prescribed by the Lieutenant-Governor in Council, under the Ontario Factories Act. (*Printed.*)

No. 26.. Report of the Assistant Inspector of Public Schools, upon the condition of the French Schools in the United Counties of Prescott and Russell. (*Printed.*)

No. 27.. Regulations respecting Upper Canada College. (*Not printed.*)

No. 28.. Report of the Inspector of the Elgin House of Industry, for the year ending 31st October, 1887. (*Not printed.*)

No. 29.. Copy of an Order in Council, approved on the 2nd February, 1888, commuting the fees payable to R. O'Hara, Esquire, Local Master and Deputy Registrar at Chatham. (*Printed.*)

No. 30.. Papers relating to a certain Mortgage, belonging to the estate of the late Andrew Mercer. (*Not printed.*)

No. 31.. Papers relating to the bequest of one James Evenden, formerly of the Town of Barrie, to the Deaf, Dumb and Blind Institution of Upper Canada. (*Not printed.*)

No. 32.. Copies of Orders in Council, commuting the fees of certain Surrogate Court Judges. (*Printed.*)

No. 33.. Return of a copy of the Charter of the Ontario Grain and Seed Company with the names of the Incorporators; list of stockholders and amount of stock paid up, as shown by any records of the Department, together with copies of all documents and papers filed with the Government upon or relating to the Charter. Also, copies of all correspondence between the Government and the Company, or others, in relation to the Company. Also, statement of any moneys deposited with the Government, if any, and any other information in the possession of the Government relating to the Company. (*Not printed.*)

No. 34.. Statement of the affairs of the Toronto General Trusts Company, under 35 Vic., c. 83, s. 13, for the year 1887. (*Not printed.*)

No. 35.. Report upon the Division Courts of Ontario. (*Printed.*)

No. 36.. Return shewing, as to each vacancy which has occurred since the first day of January, 1884, in the office of Sheriff, Registrar of Deeds, or County Crown Attorney, when the vacancy occurred; how it was created; when it was filled; by whom it was filled; and shewing also, which of such vacancies still remain unfilled. (*Printed,*)

No. 37.. Correspondence relative to the appointment of Queen's Counsel, between the Federal and Provincial Governments. (*Printed.*)

No. 38.. Return of copies of all Orders in Council or other regulations, with regard to Timber Dues, passed since the first day of January, 1886. (*Printed.*)

No. 39.. Return, shewing all estimates of expenses of License Commissioners, and in connection with the enforcement of the Canada Temperance Act, approved by the Provincial Secretary of Ontario, for the years 1886-87 and 1887-88, including the salary and expenses of Police Magistrate. (*Printed.*)

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No. 40.. Report on the Houses of Refuge and Orphan and Magdalen Asylums, aided by the Province, for the year ending 30th September, 1887. (*Printed.*)

No. 41.. Report of the Board of Health for Ontario, for the year 1887. (*Printed.*)

No. 42.. Report of the Commissioners appointed to enquire into the form and working of Municipal Institutions in Canada and elsewhere. (*Printed.*)

No. 43.. Return shewing the number of lunatics in the County Gaols of the Province for each month from the first day of March, 1886, to the first day of March, 1887, and shewing also the number of days each lunatic was detained in the gaol. The number of buildings now under construction for the accommodation of the insane. The number they are expected to accommodate, and when the buildings will be ready for use. (*Not printed.*)

No. 44.. Report of the Commissioners of the Queen Victoria Niagara Falls Park for the year 1887. (*Printed.*)

No. 45.. Return of copies of all Orders in Council with respect to the investment of Sinking Funds of Municipalities under the provisions of the Municipal Act. (*Printed in part.*)

No. 46.. Report of the Commissioners appointed to revise and consolidate the Public Statutes of the Province. (*Printed.*)

No. 47.. Return from the Queen's Printer as to the disposal of the Sessional Statutes for the year 1887. (*Not Printed.*)

No. 48.. Return from the Queen's Printer as to the disposal of the Revised Statutes for the year 1887. (*Not printed.*)

No. 49.. Correspondence relative to the Accounts between the Provinces of Ontario and Quebec and the Dominion of Canada (*Printed.*)

No. 50.. Bursar's statement of the affairs of Upper Canada College, for the year ending 30th June, 1887. (*Printed.*)

No. 51.. Return shewing the number of persons committed to Gaol in each County in the Province, under Division Court process, during the year 1887; the number of those who remained in Gaol for a period exceeding one month, together with the number of those against whom the judgment recovered, was for an amount less than ten dollars. (*Printed.*)

No. 52.. Return shewing the various sums expended in the last five years for Colonization Road purposes; the counties and districts in which the money was spent; the amount expended in each county and district respectively. Also, the amount, if any, spent for similar purposes, since Confederation, in the Counties of Prescott, Russell, Glengarry, Stormont and Dundas. (*Not printed.*)

No. 53.. Return of copies of all correspondence with reference to the claim of Mr. F. B. Wilkins to be placed on the list of superannuated teachers. (*Not printed.*)

No. 54.. Return shewing the number of convictions returned to the Clerks of the Peace of the several Counties in the Province during the year 1885. The number of such convictions severally made by Police Magistrates; Reeves, acting as Justices of the Peace, *ex-officio*, and duly qualified Justices of the Peace. Also, shewing the number in each County, of qualified Justices of the Peace receiving copies of the Statutes of Ontario for the same year. (*Printed.*)

No. 55.. Return of all Commissions of Inquiry issued during the years 1886 and 1887; the subject of the Inquiry in each case; the names of the Commissioners, their salary or other remuneration, and a statement of the expenses of each such Inquiry. Such Return to show whether the Commissioners, or any of them, held any, and if so, what other office or employment in the publice service of the Province. (*Printed.*)

No. 56.. Statement of the answers referred by members of the Grand Trunk Insurance and Provident Society, to certain questions submitted to them, in connection with the operations of the Workman's Compensation for Injuries Act." (*Printed.*)

No. 57.. Report upon the Hospitals of the Province, for the year ending 30th September, 1887. (*Printed.*)

No. 58.. Statement of the Returns forwarded to the Department of the Provincial Secretary of the fees and emoluments received by the Registrars of Ontario for the year 1887, made in accordance with the provisions of R. S. O., c. 111, s. 97, and 43 Vic. cap. 3, sec. 2, with which are contrasted receipts of same nature in 1885 and 1886. (*Printed.*)

No. 59.. Report of the Master of Titles, for the year 1887. (*Printed.*)

No. 60.. Report of the Electoral, District, Township and Horticultural Societies of Ontario, organized under the Agricultural and Arts Act. (*Not printed.*)

No. 61.. Return shewing the indebtedness of any municipality to the Government, whenever the same may be in arrears for over one year, either on account of principle or interest. (*Printed.*)

No. 62.. Return shewing the sum at which the contract for constructing drainage works in the Township of Raleigh was let to John Elliott; the sum paid to the said contractor; the sums, if any, paid to each of the sub-contractors, with their names and date of payment; also, the name of the engineer or other person employed by the Ontario Government on whose recommendation or report such payments have been made, together with copies of such recommendation or report, if any. Also, a Return of all correspondence and communications, if any, between any member or officer of the Government, and any one on behalf of the said sub-contractors since the first day of January, 1879. (*Not printed.*)

No. 63.. Return shewing the name of the several applicants for grants from the Crown, of the water lots in front of lots 5, 6, 7 and 8, in the first concession of the Township of Bertie, fronting on Niagara River. The names of all the parties to whom patents therefor issued, the dates of such patents and the consideration paid in each case. (*Not printed.*)

No. 64.. Return shewing the amounts received by County or City Treasurers throughout the Province, on account of fines imposed for violations of the Scott Act. (*Not printed.*)

No. 65.. Return shewing the amounts paid up to this date for land expropriated for Niagara Falls Park purposes, to whom paid and dates of payment. Also, a detailed statement of all moneys expended by the Government (other than for the purchase of land) through the Park Commissioners or otherwise, during the year 1887, and for what services and to whom paid. Also, all moneys received by the Commissioners on account of the sale of buildings, or on any other account during the year 1887; also, shewing names of all parties appointed to any office in connection with the Park up to this date, and also, shewing the nature of their employment; their salaries, and the dates of their appointment. (*Printed.*)

No. 66.. Statement of moneys received and expended on account of the Mercer estate during the year 1887. (*Printed.*)

No. 67.. Return of copies of all correspondence between the Governments of Ontario and the Dominion in reference to an alleged claim of the Six Nation Indians to compensation for lands drowned by the construction of a dam across the Grand River at Dunnville by the Welland Canal Company in or about the year 1833. (*Printed.*)

No. 68. Statement of the Bursar of the University of Toronto, shewing cash transactions, for the year ending 30th June, 1887. (*Printed.*)

No. 69.. Correspondence respecting the new Parliament Buildings. (*Printed.*)

No. 70.. Report of the Inspector of Public Legal Offices, for the year 1887. (*Printed.*)

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No. 71.. Return shewing the amounts paid to each Judge or other officer whose fees have been commuted in lieu of his fees, since they were commuted; and shewing, also, the fees received by the Province which, but for such commutation, would have been received by such Judge or other officer. Such Return to shew the respective amounts in each year separately. (*Printed.*)

No. 72.. Report of the Secretary and Registrar of the Province, for the year 1887. (*Printed.*)

No. 73.. Correspondence respecting the Land and Timber in the recently Disputed Territory of the Province. (*Printed.*)

No. 74.. Return of copies of the evidence taken by Æmilius Irving, Esquire, Q.C., with reference to the Ontario Grain and Seed Company, and of the Report, if any, made by him with regard to the said Company, its formation, or operations. (*Not printed.*)

No. 75.. Return of copies of all correspondence between the Minister of Education and any publisher or other person respecting the authorization of text books, or the right to publish the same, subsequent to that already brought down. (*Printed.*)

No. 76.. Report upon Mechanics' Institutes. (*Printed.*)

No. 77.. Return of the Writ of Supersedeas issued for the removal of James Goulbourne, Esquire, from the Commission of the Peace for the County of Peterborough. Also, copies of all petitions or other applications for his removal, and copies of all correspondence with reference to such petitions or applications or the said removal. Also, copies of all reports to the Executive Council or His Honour the Lieutenant-Governor, with reference to the said matters, or any of them. (*Not printed.*)

No. 78.. Copy of an Order in Council commuting the fees payable to His Honour Judge Lazier under the Surrogate Courts Act. (*Not printed.*)

No. 79.. Return of copies of all correspondence and papers in any way relating to the removal of Mr. B. B. Miller, of Wiarton, from the offices of the Clerk of the Division Court, Issuer of Marriage Licenses, and from the Commission of the Peace. (*Not printed.*)

No. 80.. Return shewing the Counties in Ontario that offer a bounty for the destruction of Wolves; the amount offered and the amount paid in each year by such Counties since 1880. (*Not printed.*)

RETURN

To an Order of the Legislative Assembly, passed on the 13th February, 1888, for a Return shewing the amounts paid to each Judge or other officer whose fees have been commuted in lieu of his fees, since they were commuted; and shewing also the fees received by the Province, which, but for such commutation, would have been received by such Judge or other officer, such Return to shew the respective amounts in each year separately.

ARTHUR S. HARDY,
Secretary.

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, March 20th, 1888.

RETURN to an Order of the House made on the 13th of February, 1888, shewing the amounts paid to each Judge, or other officer, whose fees have been commuted in lieu of his fees since they were commuted; and shewing also the fees received by the Province in the years 1886-87, which, but for such commutation, would have been received by such Judge or other officer.

County.	Name of Surrogate Judge.	Date of Commutation.	Amount of Commutation.	How Commutation was based.	Amount received by Province in 1886.	Amount received by Province in 1887.
					$	$
Brant	Jones, S. J.	1st Jan., 1884	360 00	On revenue for 1882 ($360.50)	295 50	572 50
Bruce	Kingsmill, J. J	1st Oct., 1881	408 00	On preceding year's revenue, 1880 ($419.00)	354 90	281 20
Dufferin	McCarthy, M	1st Feb., 1886	168 00	" " 1885 ($168.00)	76 00	113 50
Frontenac	Price, C. V	1st Feb., 1882	752 00	" " 1881 ($752.00)	294 50	420 50
Halton	Miller, T.	1st Nov., 1881	417 00	" " 1880 ($419.50)	272 00	225 80
Leeds and Grenville	McDonald, H. S.	1st June, 1881	480 00	From preceding two years, 1878 ($513,70), 1879 ($342.30)	741 00	568 90
Lincoln	Senkler, E. J.	1st Feb., 1882	566 00	On preceding year's revenue, 1881 (566.00)	250 00	250 00
Middlesex	Elliott, Wm	1st Jan., 1883	925 00 increased to $1,000 in 1886	" " 1881 ($934.00)	1,155 00	910 30
Northumberland and Durham	Benson, T. M. Clark, G. McK. (resigned)	1st June, 1881	600 00	Average of preceding two years, 1879-80 (615.50)	503 00	589 00
Ontario	Burnham, Z.	1st May, 1881	540 00	On preceding year's revenue, 1879 ($582.50)	594 00	573 10
Peel	Scott, A. F.	1st Feb., 1882	240 00	" " 1881 ($291.13)	283 00	306 50
Prescott and Russell	Daniell, J. (now deceased)	1st May, 1883	126 00	" " 1882 ($127.70)	92 50	50 00
Renfrew	Deacon, J.	1st Oct., 1881	264 00	" " 1879-80 ($266.00)	58 50	116 00
Simcoe	Ardagh, J. A.	1st Jan., 1882	479 00	" " 1880-81 ($479.40)	376 00	476 50
Victoria	Dean, W. W	1st Jan., 1885	500 00	" " 1883 ($684.59)	116 00	89 50
Waterloo	Miller, Wm	1st Feb., 1883	704 00	" " 1882 ($704.00)	623 00	587 50
Wellington	Drew, Geo. A	1st July, 1882	505 00	" " 1881 ($505.00)	515 00	460 50
Wentworth	Sinclair, J. S.	1st April, 1881	1,000 00	" " 1879 ($1,165.50)	1,205 00	1,236 50

RETURN to an Order of the House made on the 13th of February, 1888, shewing the amounts paid to each Judge, or other officer, whose fees have been commuted in lieu of his fees since they were commuted; and shewing also the fees received by the Province in the years 1886-7, which, but for such commutation, would have been received by such Judge or other officers.

County.	Name of Local Master and Deputy Registrar.	Date of Commutation.	Amount of Commutation.	How Commutation was based.	Amount received by Province in 1886.	Amount received by Province in 1887.
					$	$
Brant	Judge Jones (Local Master)	16th Mar., 1886	577 00	Upon average revenue of preceding five years	382 20	250 50
Huron	H. McDermott (Local Master and Deputy Registrar.) S. Malcolmson (Local Master).	5th May., 1882	2,500 00	" " "	536 50	386 30
Victoria	Judge Dean (Local Master)	31st Dec., 1885	900 00	" " "	457 18	297 50
Waterloo	Judge Lacourse (Local Master).	19th Mar., 1886	591 00	" " "	407 97	577 00
Wentworth	J. E. O'Reilly (Local Master and Deputy Registrar). Miles O'Reilly, Q.C. (Local Master).	20th Oct., 1882	4,500 00	" " "	2,016 00	2,404 10

REPORT

Of the Secretary and Registrar of the Province of Ontario for the year ending the 31st day of December, 1887.

Presented to the Legislative Assembly of Ontario.

By Command,

ARTHUR S. HARDY,
Secretary.

Provincial Secretary's Office,
Toronto, 20th March, 1888.

REPORT

OF THE

SECRETARY AND REGISTRAR

OF THE

PROVINCE OF ONTARIO,

FOR THE YEAR ENDING THE 31st DAY OF DECEMBER,

1887.

To the Honourable Sir Alexander Campbell,

Knight Commander of the Order of St. Michael and St. George, Member of the Queen's Privy Council for Canada, etc., etc., etc., Lieutenant-Governor of the Province of Ontario.

May it please Your Honour:

The undersigned begs respectfully to present to Your Honour the Report prepared with respect to the chief transactions of the Department of the Secretary and Registrar of the Province of Ontario during the year ending the 31st day of December, 1887.

ARTHUR S. HARDY,
Secretary and Registrar of the Province of Ontario.

Provincial Secretary's Office,
Toronto, 20th March, 1888.

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, 14th March, 1888.

To the Honourable
ARTHUR STURGIS HARDY, Q.C., M.P.P.,
Secretary of the Province of Ontario,
Etc., etc., etc.

SIR,—I have the honour to submit, for your information, my annual statement with reference to the chief transactions of this office during the year ending the 31st day of December, 1887.

As was mentioned in my report for the year 1886, there was introduced at the beginning of last year a system by which an exact record was kept from day to day of the letters received by and of the letters sent out from this office, and of the fyles referred to other Departments of the Government and of the reports received thereon. The superseded system, by which was obtained at the end of each year an estimate of the correspondence of the office, consisted of searching all the entries made during the year in the Office Register, and of compiling therefrom the Statements hitherto publis ed. Though reliable up to a certain point, the old system, as will easily be understood by any one familiar with office routine, was not entirely satisfactory, especially as regards the volume of correspondence.

During the year 1887, nine thousand six hundred and thirteen despatches, letters and telegrams were received in the office, and nine thousand, two hundred and twenty-seven acknowledgments or replies written and sent out. This correspondence was largely with reference to three thousand, nine hundred and sixty-seven new subjects dealt with in the course of the year, but many of the letters received and written had relation to subjects that had arisen in other years.

During the year, two thousand, three hundred and sixty-nine office-fyles were referred for the information or consideration of other Departments, from which one thousand, seven hundred and eighty-six reports were received and acted upon.

The following is a synopsis of the routine work of the office during the year 1887 :—

Twenty-nine thousand, three hundred and seventy-eight Marriage Act forms were supplied to Issuers throughout the Province, from whom the sum of $2,937 was received in fees.

Two hundred and fourteen Commissions under the Great and Privy Seals were engrossed in this office and issued.

Warrants under the hand and seal of His Honour the Lieutenant-Governor were issued for the removal from the County gaols to the various asylums of two hundred and eighty persons committed and found on examination by the respective County Judges and Medical Examiners, to be insane and dangerous to be at large. The Medical Super-

intendents of the Asylums having reported the recovery of eighty patients, Warrants directing their discharge were issued. In the course of the year, many deaths in the asylums were reported as well as the discharge from the gaols of many persons committed thereto as insane, but who, after a period of detention, were found by the Gaol Surgeons to have sufficiently recovered to justify their release by the Sheriffs, acting under the provisions of the Statute. Others again were discharged by order of the Lieutenant-Governor, it having been shown that the examining authorities were unable to agree as to their mental condition.

The usual supply of blank forms for the annual Returns required by various Acts to be made by Municipal Clerks, the Executive Officers of Joint Stock Companies and others, was printed and distributed, and a large number of such returns received, acknowledged and fyled for public reference.

Six hundred and thirteen appointments to office were gazetted.

Eleven proclamations by His Honour the Lieutenant-Governor, as mentioned below, were also gazetted :—

(1) To summon the Legislative Assembly to meet on the 10th of February for the despatch of business.

(2) To add to the Village of Essex Centre sufficient land for a site for the High School there.

(3) To extend the limits of the Town of Aylmer.

(4) To extend the limits of the City of Toronto.

(5) To erect the Village of Aurora into a Town.

(6) To extend the limits of the Town of Woodstock, and to re-divide the town into Wards.

(7) To bring into effect "An Act respecting Upper Canada College."

(8) To offer a reward for information that would lead to the arrest and conviction of the persons who, on the 15th November, 1887, placed dynamite cartridges on the premises of one Thomas Anderson, of Orangeville, a constable.

(9) Respecting the due observance as Holidays, of the Mondays following Christmas and New Year's Days.

(10) To bring into effect on the 31st day of December, 1887, "The Revised Statutes of Ontario, 1887."

(11) To summon the Legislative Assembly to meet on the 25th of January, 1888, for the despatch of business.

In addition, notices by direction of His Honour, were given respecting (*a*) the setting apart of the 21st of June last, for due observance as the Fiftieth Anniversary (Jubilee) of the day upon which Her Majesty ascended the Throne, and (*b*) the due observance of Thanksgiving Day ; both days were formally proclaimed for the purposes indicated by His Excellency the Governor-General.

One hundred and twenty-one notices were given in the *Gazette* with respect to the incorporation by Letters Patent, of Joint Stock Companies and of the issue of Supplementary Letters Patent.

Letters Patent under the Ontario Joint Stock Companies' Act were engrossed and issued to eighty-eight Companies whose capital, in the aggregate, amounted to ten million, five hundred and seventy-three thousand eight hundred dollars. A detailed list of these companies appears elsewhere.

Ten Supplementary Letters were also granted for the purpose of confirming by-laws made by certain companies to increase their capital; for sub-dividing the shares of existing companies; for extending their powers, or for other purposes.

Twenty-one Returns to Addresses or Orders of the Legislative Assembly, as well as many Reports, were brought down by the Department and laid on the table of the House.

The fees received by this office during the year amounted to $7,711.

More detailed information will be found in the following statements appended to this Report as Appendices:—

Appendix I. is a comparative statement for the years 1868, 1871, 1875, 1877, 1881, 1883 and 1886, as well as 1887, showing the work done in this office during those years. Coming, as it does, at the end of the first twenty years during which the office has been in existence, this table may not be uninteresting as it, in a measure, indicates the gradual increase of the work. The years selected are those making periods in the average of about three years each, and are those most easily available for the purpose in view.

Appendix II. is a comparative statement and, as between the years 1872 and 1887, shows the marked increase in the work done and the duties performed in the Provincial Secretary's Department, and offices attached thereto by Order-in-Council.

Appendix III. contains a list of the Joint Stock Companies created by Letters Patent granted during the year 1887, giving in each case the name of the company, the amount of its capital and the number of shares into which its capital is divided.

Appendix IV. shows with some detail the companies to which Supplementary Letters Patent were issued during the year and the purposes for which they were granted.

Appendix V. is a detailed statement of the fees received in 1887 and the respective services rendered therefor.

Appendix VI. is a synopsis of the Returns to Addresses of the House, presented to the Legislative Assembly during the session of 1887.

In addition to this Report, the following Reports from the various branches of the Department and the offices connected therewith have been laid on the table of the House:—

The Twentieth Annual Report of the Inspector of Prisons and Public Charities on the Asylums for the Insane and the Asylum for Idiots of Ontario, for the year ending 30th September, 1887.

The Twentieth Annual Report of the Inspector of Prisons and Public Charities upon the Common Gaols, Prisons and Reformities of Ontario, for the year ending the 30th of September, 1887

The Seventeenth Annual Report of the Inspector of Prisons and Public Charities

upon the Ontario Institution for the education and instruction of the Deaf and Dumb, Belleville, for the year ending the 30th of September, 1887.

The Sixteenth Annual Report of the Inspector of Prisons and Public Charities upon the Ontario Institution for the education and instruction of the Blind, Brantford, for the year ending the 30th of September, 1887.

The Eighteenth Annual Report of the Inspector of Prisons and Public Charities upon the Houses of Refuge and Orphan and Magdalene Asylums aided by the Province of Ontario, for the year ending the 30th September, 1887.

The Eighteenth Annual Report of the Inspector of Prisons and Public Charities upon the Hospitals of Ontario, for the year ending the 30th of September, 1887.

The Report for the year 1886 of the Registrar General of Ontario.

The Report of the Provincial Secretary, for 1887, upon the working of the Tavern and Shop Licenses Act.

Report of the Inspector of Division Courts, for 1887.

Report of the Department of Immigration, for 1887.

All of which is respectfully submitted.

G. E. LUMSDEN,
Assistant Provincial Secretary.

APPENDIX I.—Comparative Statement showing the work done in the Provincial Secretary's Office during the years 1868, 1871, 1875, 1877, 1881, 1883, 1886 and 1887.

WORK DONE.	1868.	1871.	1875.	1877.	1881.	1883.	1886.	1887.
Number of Fyles, as shewn by the Office Register	1,172	1,264	1,862	1,983	2,408	3,336	3,575	3,967
Letters received	2,107	1,690	3,289	3,162	4,162	5,586	6,097	9,613
Letters sent	1,667	1,280	3,326	3,358	3,756	4,646	5,734	9,227
References to other Departments	482	912	1,642	1,528	1,790	1,885	2,899	2,369
Reports from other Departments	256	470	966	1,232	1,395	1,275	2,689	1,786
Letters Patent issued under the Joint Stock Companies Act	19	24	57	38	119	114	90	88
Supplementary Letters Patent						10	14	10
Circulars	240	60	1,429	891	954	500	200	250
Declarations fyled	33	30						
Warrants *re* Lunatics	34	195	160	256	359	310	394	360
Notarial Certificates	48	72	57	131	76	115	93	122
Statutory Returns	52	58	135	792	2,500	3,200	1,000	1,200
Marriage Act Forms, etc., issued			28,422	25,384	27,882	29,920	26,254	29,378
Printed Forms distributed to Sheriffs					1,800	1,700	2,000	3,000
Other Printed Forms for Municipal and other Returns					3,500	3,600	3,350	3,200
Commissions under Great and Privy Seals	135	190	139	170	275	318	227	214
Fees received	$1,938	$2,282	$5,688	$5,253	$7,021	$8,199	$6,947	$7,711
Ontario Gazette—								
Proclamations published		16	21	33	17	4	13	4
Appointments Gazetted	110	149	94	460	525	461	535	613
Public Notices	47	58	80	36	127	123	119	121

APPENDIX II.—Comparative Statement of the Work done in the Provincial Secretary's Office.

WORK DONE.	1872.	1887.	Increase.
No. of Files as shown by office register	1585	3967	2382
Letters received	2326	9613	7287
Letters sent	1744	9227	7483
References to other Departments	1396	2369	973
Reports from other Departments	853	1786	933
Circulars sent	338	250	
Warrants for the removal and discharge of lunatics	213	360	147
Statutory returns received	58	1200	1142
Notarial Certificates issued	88	122	34
Charters incorporating Companies issued	16	88	72
Supplementary Letters Patent issued	None.	10	10
Marriage Act Forms printed and issued	None.	29378	29378
Printed Forms distributed to Sheriffs	None.	3000	3000
Other printed forms distributed	None.	3200	3200
Commissions written and issued	202	214	12
Declarations filed	14	None.	
Fees received	$2421 00	$7711 00	$5290 00
Proclamations prepared and published	16	11	
Appointments gazetted	172	613	441
Public notices in *Gazette*	30	121	91

NOTE.—In addition to the above, there is a large correspondence of a confidential, or of a semi-private character, covering some two thousand letters sent out, and probably as many received during the year. Very many written instructions and memoranda are also sent to the different branches of the Department, and many statements and schedules are prepared, together with a large number of official reports and recommendations made to Council and to His Honour the Lieutenant-Governor.

APPENDIX II.—Comparative Statement of work in Provincial Registrar's Office.

DOCUMENTS.	1872.	1887.	Increase.	Decrease.
Commissions recorded	203	372	69	
do indexed	203	372	69	
Letters Patent recorded	15	88	73	
do indexed	15	88	73	
Bonds recorded	44	40		
do indexed	44	40		
Warrants, Lunatics, recorded	150	280	130	
do indexed	150	280	130	
Discharge Warrants recorded	60	80	20	
do indexed	60	80	20	
Certificates, P.L.S., recorded	None.	18	18	
do indexed	None.	18	18	
Crown Land Patents recorded	2,463	1,230		1,233
do indexed	2,463	1,230		1,233
Supplementary Letters Patent recorded	None.	10	10	
do indexed	None.	9	9	
Benevolent Societies registered				

JOHN F. C. USSHER,
Deputy Registrar.

APPENDIX II.—Comparative Statement of workd one in the Registrar-General's Office in 1887, as compared with that of 1872.

NATURE OF WORK.	1872.	1887.	Increase.
Number of Births, Marriages and Deaths registered	43,951	85,586	41,635
Transcribing and comparing these registrations	43,951	None.	Abolished.
Indexing Births, Marriages and Deaths *	53,890	100,089	46,199
Letters written	177	2,566	2,389
Applications for Certificates of B. M. and D. †	6	258	252
Certificates granted	3	153	150
Addressing Annual Reports	3,000	3,000	.....
Folding and addressing forms to Postmasters	None.	2,587	2,587
Examining, counting and separating the returns received from Division Registrars	40 District	1,354	1,314
Folding and addressing forms to Division Registrars	40 do	677	637
ANNUAL REPORT.			
Total number of pages	23	234	211
Tables do do	11	218	207
Filling up and addressing Certificates for Fees to Division Registrars	None.	677	677

* In Marriages the name of the Bridegroom and Bride are both indexed.

† Each application for a Certificate requires a search of the Schedules.

Expenses, 1887	$9,576 72
do 1872	9,338 06
Increase	$ 238 66

H. S. CREWE,

February 3rd, 1888. Inspector.

APPENDIX II.—Comparative Statement shewing the increase of work in the Department of Prisons and Charities, from the year 1872 to 1887.

——	1872.	1887.	Increase.
Number of Common Gaols and District Lock-ups inspected	41	52	11
Number of Asylums for the Insane and Idiotic supervised and inspected	3	5	2
Number of Reformatories and Prisons supervised and inspected	1	3	2
Number of Institutions for the Deaf and Dumb and Blind supervised and inspected	2	2	.....
Number of Hospitals inspected	9	17	8
Number of Houses of Refuge inspected	3	21	18
Number of Magdalen Asylums inspected	None.	5	5
Number of Orphan Asylums inspected	None.	24	24
Total number of Institutions supervised and inspected each year.	59	129	70
Number of separate inspections which had to be made during each year under the provisions of Statutes	112	263	151
Number of prisoners committed to County Gaols in each year	6598	11017	4419
Number of prisoners confined in the Central Prison each year	Not opened.	1152	1152
Number of prisoners confined in the Provincial Reformatory, Penetanguishene, each year	203	265	62
Number of Insane and Idiotic in Asylums each year	1717	3553	1836
Average daily number of Insane and Idiotic persons under treatment each year	1413	3137	1724
Number of Deaf and Dumb in the Belleville Institution	149	264	115
Number of Blind in the Brantford Institution	34	155	121
Number of patients and inmates of Hospitals and Charitable Institutions each year	5342	13404	8062
Number of actual files upon distinct subjects requiring action during each year	587	794	207
Number of letters written	1749	6531	4782
Total cost of maintaining Asylums for the Insane	$142,834 00	$415,330 00	$272,496 00
Revenue derived from paying patients in Asylums as per Public Accounts	18,894 00	48,742 00	29,848 00
Total cost of maintaining Public Institutions	255,116 00	611,884 00	356,768 00
Cash revenue received from Institutions	25,295 00	85,654 00	60,359 00
Total annual aid to Charitable Institutions	42,100 00	112,977 00	70,877 00
Number of lunatic estates in possession of and managed by Inspector as Statutory Committee	Nominal.	539	539

Since 1881 accounts in connection with Meat Supply for six of the Public Institutions have been recorded and audited in Inspector's Department, involving an average yearly expenditure of $65,500.

APPENDIX II.—Comparative Statement shewing the volume of business done in the License Branch during the years 1872 and 1887 respectively, and classifying, as far as possible, the business done under general heads. This Branch was connected with the Treasury Department from 1868 to 1875, and since 1876 to the Provincial Secretary's Department.

SERVICES.	1872.	1887.	Increase.	REMARKS.
Letters received	306	3716	3410	
Packages received	.....	764	764	
Letters written and sent	381	4892	4511	
Circulars sent	.....	2300	2300	
Applications for licenses sent	.....	2386	2386	
Inspectors' certificates sent	.....	2051	2051	
Bonds sent	.....	2040	2040	
Bonds received	.....	2273	2273	
Requisitions sent	.....	510	510	
Statements 1, 2, 3 and 4 sent	.....	1563	1563	
" 1, 2, 3 and 4 received, giving full particulars of the license fund account with each Municipality	.....	1563	1563	
Blank deposit receipts sent	.....	3500	3500	
Deposit receipts received	.....	2569	2569	
Municipalities in which moneys were paid	.....	176	176	
Licenses sent to Commissioners	.....	2,160	.....	Decrease 3519 in number of licenses sent out.
Licenses sent to Issuers	5,679	.....	.....	
Number of accounts audited and ordered to be paid	.....	3267	3267	
Total amount received for licenses and fines	$75,295 96	$401,481 65	$326,185 69	
BOOKS KEPT.				
License Ledger	1	1	.....	In which is kept an account with each license district, the district being charged with every license and transfer sent to the Board, and credited with those issued or returned unused to the Department.
Licence Check Book	.....	1	1	Each license is numbered, and when sent out the number of the license is entered in this book, so that at any moment it may be shown in what particular district a certain license as numbered was issued. This book is also a check on License Ledger No. 1, in case of dispute between the Department and the Boards of Commissioners as to the number of licenses sent them.
Licence Account Ledger	.....	1	1	In which is entered every transaction in connection with the duties received in each license district, for licenses, transfers, removals, and for fines collected, including the distributions and payments made to every Municipality in the Province, and the Hon. the Provincial Treasurer respectively,

APPENDIX II.—Comparative Statement, etc.—*Continued.*

SERVICES.	1872.	1887.	Increase.	REMARKS.
License Account Ledger—*Continued*—				and also the sums paid to inspectors, magistrates, constables, detectives, county attorneys, clerks of the peace, and other officers, for fees and disbursements, in connection with services under the License, Dunkin and Canada Temperance Act, in cases prosecuted before magistrates, and also in cases of appeal to the County Judge in Chambers, and also to the Quarter Sessions, and in cases removed by certiorari.
Copying Books	1	1		Into which is copied every letter sent by the Department, all being properly indexed.
Letter Register Book		1	1	
Journal		1	1	
do		1	1	
The Annual Report laid before the Legislative Assembly and circulated		1	1	395 copies of this Report were circulated. The report contains numerous tabulated and other statements of matters pertaining to the working of the License Act, during the license year, the number of licenses issued in each Municipality, the duties received therefrom, the amounts paid to the treasurer of each Municipality and to the Hon. Provincial Treasurer respectively, the number of cases prosecuted and amount of fines collected, the expense of working the Act, annual comparisons, etc., etc.
List of Inspectors and Commissioners, with their post office address		1	1	
List of Banks in which deposits of the License Fund are made		1	1	
List of the sureties of each Inspector		1	1	
List of Police Magistrates, and their salaries, if any		1	1	
List of all orders sent to the printers		1	1	
Record of quarterly returns of fines, convictions and visits		1	1	
Record of estimates of enforcement of the Canadian Temperance Act		1	1	
Record of all blank forms sent Inspectors and others		1	1	

APPENDIX II.—Comparative Statement shewing the volume of business done in the administration of Criminal Justice Branch, Provincial Secretary's Department, during the years 1872 and 1887, classifying so far as possible the business done under general heads.

	1872.	1887.	Increase in 1887.	Decrease in 1887.
Number of Criminal Justice accounts received and audited	5172	8050	2878	
" Abstracts of deductions thereof sent	132	205	73	
" pages of Abstract deductions thereof	208	1338	1130	
" Recommendations thereof to Council	137	257	120	
" Letters sent	363	173		190
" pages of letters sent	384	189		195
" circulars, blanks, etc., sent	602	3500	2898	
" Sheriffs, Criers and Constables' accounts for attending Courts, without Juries, audited and recommended for payment (no record kept prior to 1874), 1874	125	222	97	
" Clerks' of Assize accounts audited and recommended for payment (no record kept prior to 1874), 1874	43	80	37	
" Judges' accounts, for revision of Voters' Lists, audited and recommended for payment (no record kept prior to 1874), 1874	39	60	21	
" Election accounts audited and recommended for payment (election 1871)	645	4021	3378	
" Abstracts of deductions thereof	90	100		
" pages of Abstracts	360	650	290	
Totals	8298	18845	10932	385
			385	
Total increase			10547	

PROVINCIAL SECRETARY'S DEPT.,
TORONTO, 4th February, 1888.

APPENDIX II.—Comparative Statement of work done in the Division Courts Department as between the Years 1872 and 1887.

Appointment Inspector, 1872.....	The Department has grown to large proportions since the appointment of Mr. Dickey as Inspector in 1872.
No. of Courts and Officers.....	There are at present within the Province 321 Division Court Offices, with 321 Clerks and 346 Bailiffs as Officers of the Government.
Returns.....	From returns made by them (on printed forms sent for the purpose) the tables appended to the annual report are compiled. These tables have enlarged from 10 printed pages in 1878 to 82 pages in 1886.
Sureties.....	Particulars of the covenants, taken by the County Judges and filed with the Clerks of the Peace, of all these officers are, together with the changes of sureties constantly recurring, entered in a register kept for that purpose.
Magnitude of the Business.....	For the three years ending 1886 the number of suits entered was 180,943, exclusive of judgment summonses and transcripts of judgments from other courts, representing $6,618,409. In 1886 the total amount paid into Court for suitors was $804,544. The returns for 1887, now nearly completed, shew an increase of about 4,000 suits on the returns of the preceding year.
Revenue.....	During the last three years the amount paid into the Provincial Treasury was $20,203.63. For the year 1887 the amount paid was $7,465.14—being $3,915 over and above the amount of all salaries and contingent expenses of the Department.
No. of Complaints.....	117 complaints against Clerks and 84 complaints against Bailiffs were made and enquired into during the past year.
Large Correspondence.....	The correspondence has grown immensely. The files of the last two years equal those of the preceding four years. Those for 1887 number 819.
Increased Duties.....	Recent legislation has added much to the duties of the Inspector—attending Division Court Boards, etc.
Clerks.....	Two Clerks are kept fully employed in the office work of the Department.

APPENDIX III.—List of Joint Stock Companies incorporated during 1887 by the issue of Letters Patent, under the Ontario Joint Stock Letters Patent Act.

NAME OF COMPANY.	Number of Shares.	Amount of each Share.	Capital.
		$	$
The Toronto Asphalt, Block Paving and Manufacturing Company	1,000	100	100,000
The Brockville Street Railway Company	300	100	30,000
The Mount Forest Electric Light Company	30	100	3,000
The Hamilton Curling Rink Company	400	25	10,000
The Cornwall Curling Club	500	5	2,500
The Farmers' Supply Company of Prescott (Limited)	800	50	40,000
The Toronto Engineering Supply Company	500	100	50,000
The Holmes Electric Protection Company of Toronto (Limited)	1,000	100	100,000
The Good Templar Publishing Company of Toronto	60	50	3,000
The Toronto Ferry Company	1,000	100	100,000
The Cottage Building Association of Ottawa (Limited)	750	100	75,000
The Perth Electric Light Company (Limited)	160	100	16,000
The Victoria Rink Company of Galt	500	20	10,000
The Toronto Association of Canoeists (Limited)	600	5	3,000
The Gutta Percha and Rubber Manufacturing Company of Toronto	2,000	100	200,000
The Hamilton Steamboat Company	500	100	50,000
The Hemming Brothers Company of Toronto (Limited)	1,000	50	50,000
The Gray, Young and Sparling Company of Ontario (Limited)	1,000	50	50,000
The Central Smith Dairy Company (Limited)	300	10	3,000
The Wesley Park Building Association of Niagara Falls	400	100	40,000
The Norwich Knitted Goods Company	600	5	3,000
The Mead Electric Company of Toronto	10,000	50	500,000
The Ottawa Amateur Athletic Association	1,000	20	20,000
The Peninsular Park Hotel Company of Lake Simcoe (Limited)	1,600	25	40,000
The G. and J. Brown Manufacturing Company (Limited) of Belleville	140	100	14,000
The Berlin Amateur Athletic Association	300	10	3,000
The Newtonville Cheese and Butter Manufacturing Company (Limited)	600	5	3,000
The Toronto Real Estate Exchange	300	10	3,000
The Forks Road Cheese Company	300	10	3,000
The Kingston and Pembroke Iron Mining Company	200,000	25	5,000,000
The Toronto Rattan and Willow-ware Company	300	10	3,000
The Ontario Tack Company	250	100	25,000
The Millbrook Curling and Skating Rink Company	150	10	1,500
The Ontario Bark Company	200	100	20,000
The Hamilon Mica Roofing Company	200	100	20,000
The Richmond Hill Manufacturing Company	60	50	3,000

APPENDIX III.—List of Joint Stock Companies incorporated, etc.—*Continued.*

NAME OF COMPANY.	Number of Shares.	Amount of each Share.	Capital.
		$	$
The Clarry Wool and Manufacturing Company of Toronto (Limited)	300	50	150,000
The Oil Springs Knights of Labour Oil Producing and Refining Company (Limited	1,500	20	30,000
The Patterson and Brother Company (Limited)	7,500	100	75,000
The Verral Cab, Omnibus and Baggage Transfer Company (Limited)	3,000	25	75,000
The Orono Cheese and Butter Manufacturing Company	600	5	3,000
The Inglewood Public Hall Company	100	10	1,000
The Englishman's Journal Printing and Publishing Company of Toronto	2,000	10	20,000
The Ontario Rubber Company of Toronto	2,500	100	250,000
The Ontario Building and Contracting Association	600	5	3,000
The Crescent Beach Association of Ontario	2,000	100	20,000
The Herr Piano Company (Limited)	750	100	75,000
The Wardsville Cheese and Butter Manufacturing Company	250	10	2,500
The Landlords' Protection and Guarantee Company of Ontario	2,500	10	25,000
The McDiarmid Manufacturing Company of Aylmer	900	50	45,000
The Rotary Steam Snow Shovel Company of Toronto (Limited)	3,000	100	300,000
The Bowmanville Electric Light Company (Limited)	160	100	16,000
The Madoc Agricultural, Industrial and Arts Association	5,000	1	5,000
The Essex Distillery Company	100	100	10,000
The Toronto Portable Gas Company	2,000	100	200,000
The Brantford Carriage Company	1,000	100	100,000
The Mercantile Trust Company of Ontario	120	25	3,000
The Hamilton Brass Manufacturing Company	120	25	3,000
The Hault Manufacturing Company of Ontario (Limited)	700	100	70,000
The Gendron Manufacturing Company of Ontario (Limited)	450	100	45,000
The Cyrus Russ, Son & Company of Beamsville (Limited)	1,500	100	150,000
The Imperial Cigar Company of Ontario (Limited)	100	100	10,000
The Germania Hall Company of Toronto	3,000	10	30,000
The Bedford Mining Company	10,000	25	250,000
The *Grocer* Publishing Company of Toronto	30	100	3,000
The Oshawa Curling and Skating Club	250	10	2,500
The Stormont Electric Light and Power Company	250	100	25,000
The Toronto Trout Fishing Club	60	50	3,000
The W. F. Cochrane Roller Mills Supply Company (Limited)	1,500	100	150,000
The *News* Printing Company of Toronto	1,000	100	100,000
The Whitefish Valley Colonization Company	10,000	10	100,000
The Ontario Wheel Company	500	100	50,000
The Sheppard Publishing Company (Limited)	250	100	25,000
The Martin Manufacturing Company of Whitby (Limited)	500	100	50,000

The Lakefield Lumber and Manufacturing Company	3,000	100		300,000
The Victoria Skating and Curling Association of Toronto (Limited)	1,000	50		50,000
The Cyclorama Company of Ontario	2,000	100		200,000
The *Canadian Sportsman and Live Stock Journal* Publishing Company, Toronto	480	25		12,000
The Anglo-American Novelty Company of Toronto (Limited)	450	100		45,000
The Collingwood Rock Well Company	600	5		3,000
The Zion Cheese Manufacturing Company of Thurlow (Limited)	700	4		2,800
The Eureka Granitic Paving Company of Ontario	200	100		20,000
The Strathroy Manufacturing Company	400	25		10,000
The Hamilton Athletic Exhibition Company	2,000	5		10,000
The London Toboggan Slide Company	30	50		1,500
The Thorold Knitting Company (Limited)	500	100		50,000
The Oaklands Jersey Dairy Company	1,000	100		100,000
The Ontario Leather Fancy Goods Company	100	200		20,000
The Orangeville Fishing and Boating Company	25	100		2,500
				10,573,800
Total Capital added by Supplementary Letters Patent to certain Companies already in existence				314,165
Total				10,887,965

APPENDIX IV.—List of Supplementary Letters Patent granted to Joint Stock Companies during 1887, for the purposes mentioned.

NAME OF COMPANY.	OBJECTS.
The Muskoka Mill and Lumber Company	Extending the powers of the Company.
The E. B. Eddy Manufacturing Company	Granting power to the Company to acquire land for the purposes of the Company's business.
The Brownsville Cheese Manufacturing Company	Increasing the capital stock of the Company from the sum of $6,000 to the sum of $7,500 by the issue of 150 shares of new stock of $10 each; also subdividing the existing shares of the Company into shares of $10 each; also extending the operations of the Company to the Village of Culloden or elsewhere in the Township of Dereham, in the County of Oxford, as the Company may determine.
The Toronto Land and Loan Company	Extending the powers of the Company.
The Toronto Real Estate Investment Company	Extending the powers of the Company.
The Chatham Manufacturing Company	Increasing the capital stock of the Company from the sum of $100,000 to $300,000 by the issue of 2,000 shares of new stock of $100 each.
The Albany Club of Toronto	Increasing the capital stock of the Club from the sum of $3,000 to the sum of $13,665 by the issue of 711 shares of new stock of $15 each.
The Atlas Woollen Company	Increasing the capital stock of the Company from the sum of $3,000 to the sum of $25,000 by the issue of 220 shares of new stock of $100 each.
The Gananoque Carriage Company	Increasing the capital stock of the Company from the sum of $50,000 to the sum of $100,000 by the issue of 500 shares of new stock of $100 each.
The London *Advertiser* Newspaper Printing and Publishing Co. (Limited).	Increasing the capital stock of the Company from the sum of $60,000 to $90,000 by the issue of 300 shares of new stock of $100 each.

APPENDIX V.—A Detailed Statement of Fees received and the services rendered therefor.

		Number.	January.		Number.	February.		Number.	March.		Number.	April.		Number.	May.		Number.	June.		Number.	July.		Number.	August.		Number.	September.		Number.	October.		Number.	November.		Number.	December.		Total Number.	Supplementary.		Total Amount.	
			$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.		$	c.			c.		
Commissions—Coroners at	$13 00	1	13	00	..	.....		2	26	00	..	.....		1	13	00	..	.....		1	13	00	1	13	00	..	.....		3	39	00	3	39	00	1	13	00	13	....		169	00
Commissions—Notaries Public	8 00	3	24	00	3	24	00	14	112	00	11	88	00	7	56	00	2	16	00	5	40	00	4	32	00	17	136	00	3	24	00	8	64	00	5	40	00	82	....		656	00
Other Commissions under Great Seal	13 00	4	52	00	1	13	00	7	91	00	2	26	00	11	143	00	12	156	00	4	52	00	2	26	00	5	65	00	2	26	00	2	26	00	1	13	00	53	....		689	00
Other Commissions under Privy Seal		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		....	....		.....	
Ferry Licenses	$15 00	..	....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		....	....		..	
Superior Court Certificates	4 00	1	4	00	1	4	00	..	....		..	.....		..	.....		1	4	00	3	12	00	..	.....		..	.....		2	8	00	1	4	00	1	4	00	10	....		40	00
County Co'rt Certificates	2 50	..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		....	....		.....	
Surrogate Court	2 00	..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		2	4	00	1	2	00	..	.....		3	....		6	00
Judicial Notary Certificate	1 00	11	11	00	6	6	00	11	11	00	5	5	00	12	12	00	12	12	00	5	5	00	6	6	00	19	19	00	11	11	00	13	13	00	7	7	00	118	....		118	00
Companies By-laws, etc.	5 00	..	.....		..	.....		..	.....		..	.....		..	.....		1	5	00	1	5	00	2	10	00	..	.....		1	5	00	1	5	00	1	5	00	7	....		35	00
Licenses to Companies	20 00		(Escheat)		1	20	00	1	20	00	..	.....		1	20	00	1	20	00	1	20	00	..	.....		..	.....		..	.....		..	.....		1	20	00	6	....		120	00
Change of name	25 00	..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		....	....		.....	
Charters of Incorpora'n.	10 00	1	10	00	1	10	00	3	30	00	6	60	00	2	20	00	3	30	00	1	10	00	1	10	00	2	20	00	2	20	00	2	20	00	1	10	00	25	....		250	00
do	25 00	..	.....		..	.....		1	25	00	..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		1	25	00	..	.....		2	....		50	00
do	30 00	3	90	00	..	.....		2	60	00	1	30	00	5	150	00	4	120	00	..	.....		3	90	00	3	90	00	1	30	00	6	180	00	5	150	00	33	....		990	00
do	40 00	2	80	00	1	40	00	1	40	00	..	.....		1	40	00	1	40	00	..	.....		..	.....		2	80	00	2	80	00	2	80	00	..	.....		12	....		480	00
do	50 00	..	.....		2	100	00	..	.....		..	.....		1	50	00	1	50	00	1	50	00	2	100	00	..	.....		3	150	00	1	50	00	..	.....		11	....		550	00
do	60 00	..	.....		2	120	00	2	120	00	1	60	00	2	120	00	1	60	00	1	60	00	1	60	00	..	.....		1	60	00	..	.....		..	.....		11	....		660	00
Marriage Licenses		..	230	00	..	153	00	..	313	00	..	264	00	..	110	00	..	259	50	..	176	00	..	120	00	..	357	00	..	245	00	..	272	00	..	365	10	.....	.....		2894	60
Supplementary		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		..	.....		.....	4	00	4	00
Totals		26	514	00	18	490	00	44	848	00	26	533	00	43	764	00	39	772	50	23	443	00	22	467	00	48	767	00	33	702	00	41	780	00	23	627	10	386	4	00	7711	60

APPENDIX VI.—Synopsis of Returns to Addresses and Orders of the House presented to the Legislative Assembly during the Session of 1887.

No.	Sessional Papers.	Subject.	Mover.
1	No. 29	Statement of the property of the Western University, of London, and the income derived therefrom.	Mr. Harcourt.
2	" 30	Total number of Students in University College on 10th March, 1886, number female Students at same date; also, number attending lectures, etc	Mr. Balfour.
3	" 31	Statement of each timber limit or berth disposed of at sale in October, 1885, number under license, name of licensees or owners, area thereof, bonus per square mile paid in respect thereof; also, dates when same were first under license	Mr. Meredith.
4	" 32	Names of persons, firms or companies indebted to the Province on 1st January, 1886, on account of timber dues, etc., amount in each case, balance due, if any, on 1st January each year since 1880; also, amount of indebtedness 1st January, 1886	Mr. Clancy.
5	" 33	Persons by whom, and the limits or berths in respect of which, the bonuses appearing as accruals from woods and forests were payable each year since 1871, etc	Mr. Meredith.
6	" 34	Copies of all Orders in Council relating to the sale of timber limits which took place in October, 1885. Names of purchasers, deposit paid, etc.; also, limits bid off for sale in 1872, etc	Mr. Meredith.
7	" 40	Regulations made by the Lieutenant-Governor in Council under the Act to amend the Free Grants and Homestead Act.	Mr. Marter.
8	" 43	Applications for payments out of the Consolidated Revenue in respect of the pine tree dues; also, aggregate sums settlers are entitled to receive on such dues	Mr. Marter.
9	" 44	Correspondence with the Architect, Mr. Waite, concerning plans for the new Parliament and Departmental Buildings.	Mr. Fraser.
10	" 48	Correspondence between Department of Education and Public School Inspectors, of Prescott and Russell, with reference to Public Schools in the French settlements	Mr. Evanturel.

11	"	49	Correspondence subsequent to the year 1882 with reference to the regulation of the waters of Lakes Simcoe and Couchiching	Mr. Gould.
12	"	52	Minutes of the Senate of the University of Toronto	Mr. McLaughlin.
13	"	53	Expenditure from Poor School Fund for years 1885 and 1886	Mr. Wood (Hastings).
14	"	54	Indebtedness of any Municipality to the Government whenever the same may be in arrears for over one year, either on account of principal or interest	Mr. Ferris.
15	"	57	Amount due the Government by settlers in the Muskoka and Parry Sound Districts for seed grain, and the amount paid back	Mr. Armstrong.
16	"	58	Correspondence between the Government and Messieurs Goddon and Helliwell respecting plans, etc., of the new Parliament Buildings	Mr. Fraser.
17	"	60	Correspondence respecting unsettled accounts between the Governments of the Dominion, Ontario and Quebec	Mr. Gibson (Huron).
18	"	63	Vacancy in the office of the Clerk of the Division Court at Picton	Mr. Meredith.
19	"	64	Number of cases brought before E. B. Borron, Stipendiary Magistrate for North Nipissing	Mr. Creighton.
20	"	67	Number of votes polled by widows and unmarried women at the late Municipal Elections	Mr. Waters.
21	"	69	Agreement entered into between the Province and Roman Catholic Episcopal Corporation, of Kingston, for use of Regiopolis College	Mr. Meredith.

PROVINCIAL REGISTRAR'S OFFICE, ONTARIO,
TORONTO, 20th March, 1888.

SIR,—I have the honour to submit, for your information, a statement of the work done in the Registrar's Branch of the Provincial Secretary's Department from 1st January, 1887, to 31st December, 1887.

I have the honour to be, Sir,

Your obedient servant,

JOHN F. C. USSHER,
Deputy Registrar.

To the Hon. A. S. HARDY, Q.C.,
Provincial Registrar.

A CONDENSED STATEMENT showing the work done in the Provincial Registrar's Branch of the Department of the Provincial Secretary from 1st January, 1887, to 31st December, 1887.

DOCUMENTS.	Recorded.	Indexed.
Commissions under Great Seal	250	250
Commissions under Privy Seal	99	99
Special Commissions	23	23
Letters Patent incorporating companies	98	98
Bonds and Covenants	40	40
Warrants removing Lunatics	280	280
Warrants discharging Lunatics	80	80
Crown Lands Patents and Deeds	1,267	1,267

In addition to the foregoing an annual Return of all Bonds and Securities recorded in this Department is prepared for the Legislative Assembly, and a quarterly Return of all the lands is also sent to the Registrar of each County in which Patents have issued, giving description of land patented, name of patentee, etc.

JOHN F. C. USSHER,
Deputy Registrar.

CORRESPONDENCE

Respecting the Land and Timber in the recently Disputed Territory of the Province of Ontario.

Presented to the Legislative Assembly.

By Command,

ARTHUR S. HARDY,
Provincial Secretary.

PROVINCIAL SECRETARY'S OFFICE,
20th March, 1888.

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CORRESPONDENCE

RESPECTING THE LAND AND TIMBER IN THE RECENTLY DISPUTED TERRITORY OF THE PROVINCE OF ONTARIO.

[1. The Lieutenant-Governor to the Secretary of State.]

$\left\{\frac{3143}{1884}\right\}$

Government House.
Toronto, 5th February, 1885.

Sir,—My Government desires to call attention once more to the request repeatedly made in former despatches for an account of the grants, licenses, and permits by your Government and its several Departments in respect to the territory until recently in dispute between the two Governments. The account desired is of the transactions since the decision of Her Majesty's Privy Council, as well as the transactions of prior date.

I avail myself of this opportunity of respectfully reminding you also that my despatches as to Imperial legislation, recommended by Her Majesty's Privy Council in respect of the Provincial boundary, and my despatch as to the Factory Act are still unanswered.

The Federal Parliament and the Ontario Legislature being now in session, my Government deems it of great importance to have full information on the above matters with the least possible further delay.

I have, etc.,

(Signed) JOHN BEVERLEY ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
The Secretary of State,
Ottawa, Ont.

[2. The Secretary of State to the Lieutenant-Governor.]

$\left\{\begin{matrix}399\\ \text{on}\\ 2262\end{matrix}\right\}$

Department of the Secretary of State.
Ottawa, 7th February, 1885.

Sir,—I have the honour to acknowledge the receipt of your despatch, No. $\frac{3143}{1884}$ of the 5th instant, calling the attention of this Government to the request made by you in former despatches for an account of the grants, licenses, and permits, by this Government and its several departments, in respect to the territory until recently in dispute between the two Governments, and to state that the matter will receive due consideration.

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto

[3. The Lieutenant-Governor to the Secretary of State.]

Government House.
Toronto, 30th October, 1885.

Sir,—In order to enable my Government to consider and dispose of an application which has been made for the confirmation of a lease made by the Dominion Government, on the 22nd July, 1875, to Messieurs Richard Fuller, John Ross, and John Dennis of certain timber land in the Rainy River District, my Government desires to have copies of all papers other than the lease which there may be in any of the Departments of your Government in relation to the lease and to the operations and accounts under it. I shall be much obliged by your procuring and furnishing these at your earliest convenience.

You will remember that by the Provisional Agreement of 1874, as extended before the making of the Award in 1878, the Dominion Government had the administration of the lands west of a Conventional Boundary, and titles were, after the final adjustment of the true boundaries, to be confirmed by the Government which should be ascertained to be the proper party for that purpose. The lands in question are situate west of that Conventional Boundary.

I have, etc.,

(Signed) JOHN BEVERLEY ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
The Secretary of State,
Ottawa, Ont.

[4. The Secretary of State to the Lieutenant-Governor.]

Department of the Secretary of State.
Ottawa, November 2nd, 1885.

Sir,—I have the honour to acknowledge the receipt of your despatch, No. 2,968, dated the 30th ultimo, upon the subject of the confirmation of a lease made by the Dominion Government on the 22nd July, 1875, to Messrs. Richard Fuller, John Ross, and John Dennis, of certain timber land in the Rainy River District, and to state that the matter will receive due consideration.

I have, etc.,

(Signed) HENRY J. MORGAN,
Acting-Under Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto, Ont.

[5. The Secretary of State to the Lieutenant-Governor.]

Department of the Secretary of State.
Ottawa, 21st April, 1886.

Sir,—I have the honour to acquaint you, for the information of your Government, that His Excellency the Governor-General has had under his consideration in Council your despatch of the 30th October, 1885, desiring copies of all papers respecting a lease

from the Dominion Government to Messrs. Richard Fuller, John Ross, and John Dennis of certain timbered lands in the Rainy River District which relate thereto.

I have now to forward to your address a registered package containing the papers applied for, as per enclosed Schedule.*

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour,
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto.

[6. THE LIEUTENANT-GOVERNOR TO SECRETARY OF STATE.]

GOVERNMENT HOUSE.
{3143/1884} TORONTO, 29th May, 1886.

SIR,—Adverting to previous correspondence upon the subject, I have now the honour to request you to state the action the Dominion Government intend to take, or has taken in the matter of the boundary legislation recommended by the Judicial Committee of the Most Honourable, the Privy Council, and adopted by Her Majesty's Order in Council, referred to in former despatches of mine.

I have, etc.,

(Signed) J. B. ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
THE SECRETARY OF STATE,
Ottawa, Ont.

[7. THE SECRETARY OF STATE TO THE LIEUTENANT-GOVERNOR.]

{5404 on 4398} DEPARTMENT OF THE SECRETARY OF STATE.
OTTAWA, 7th June, 1886.

SIR,—I have the honour to acknowledge the receipt of your despatch, No. 3143, of the 29th ultimo, requesting to be informed of the action the Dominion Government intend to take, or has taken in the matter of the Boundary Legislation, recommended by the Judicial Committee of the Most Honourable the Privy Council, and adopted by Her Majesty's Order in Council, referred to in former despatches from you.

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour,
THE LIEUTENANT-GOVERNOR OF ONTARIO.
Toronto, Ont.

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* NOTE.—As these papers include many tracings and other plans, and as they are very voluminous they are not brought down.

[8. The Secretary of State to the Lieutenant-Governor.]

{ 9400 on 27594 }

Department of the Secretary of State,
Ottawa, 8th November, 1886.

Sir,—Adverting to the letter from this Department of the 22nd July, 1874, transmitting copy of an Order of His Excellency the Governor-General in Council approving of a Memorandum of Agreement adopted by the Honourable the Minister of the Interior and the Honourable the Commissioner of Crown Lands of the Province of Ontario, relative to a provisional arrangement respecting the Western and Northern Boundaries of that Province, I have the honour to acquaint you for the information of your Government that His Excellency the Administrator of the Government is advised as follows :—

1. In accordance with the arrangements above alluded to, licenses to cut timber in the Disputed Territory were issued to Mr. Henry Bulmer, junior, and a number of others, who afterwards made assignments of their rights to the said Henry Bulmer, and that under the authority thus acquired Mr. Bulmer, and those associated with him, erected a sawmill near Rat Portage, of a cutting capacity of one million feet a month (day-work), being more than that requisite to comply with the timber regulations in that behalf in respect of all the berths acquired by him by assignment from other licensees, and made an expenditure said to be equal to $150,000 in connection with their mills and improvements and in building boats, barges and other works necessary to carry on the lumbering business ;

2. Since the decision rendered by the Judicial Committee of the Imperial Privy Council on the subject of the Boundary between Ontario and Manitoba this Government has declined to renew the licenses to Mr. Bulmer and his associates, this refusal, in the nature of things, resulting in serious loss and embarrassment to a large business enterprise, the success of which would be of great advantage to the country ;

3. In view of these circumstances and recognizing the importance of the continuance of the enterprise, His Excellency's advisers would be glad to come to some arrangement with your Government under which Mr. Bulmer and his associates, pending a settlement of the question as to the Indian title in the Territory affected by the decision of the Judicial Committee of the Imperial Privy Council, may be permitted to continue to cut and manufacture timber on the berths acquired by them before the said decision was rendered.

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto.

[9. Telegram from the Lieutenant-Governor to the Secretary of State.]

Government House,
Toronto, 22nd January, 1887.

To the Honourable,
The Secretary of State,
Ottawa.

Please send at once copy of despatch of 8th of November last, number 9400 on 27594, adverting to Memorandum of Agreement between Minister of Interior and Commissioner of Crown Lands, and to an Order in Council respecting sale of lands in disputed territory: as the original despatch has been mislaid.

(Signed) J. B. ROBINSON,
Lieutenant-Governor of Ontario.

[10. The Secretary of State to the Lieutenant-Governor.]

{431 on 27594 of 1886.}

Department of the Secretary of State,
Ottawa, January 24th, 1887.

Sir,—In compliance with the request contained in your telegram of the 22nd inst., I have the honour to transmit to you herewith copy of the despatch which was addressed to you on the subject of an Order of His Excellency the Governor-General in Council approving of a Memorandum of Agreement adopted by the Honourable the Minister of the Interior and the Honourable the Commissioner of Crown Lands of the Province of Ontario, relative to a provisional agreement respecting the Western and Northern Boundaries of the Province.

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto.

Memo.—For copy of enclosure see page 4, under date "Ottawa, 8th November, 1886."

[11. The Lieutenant-Governor to the Secretary of State.]

{561/1887}

Government House,
1st February, 1887.

Sir,—Adverting to the subject of your despatches of the 8th November, 1886, and 24th January, 1887, I shall be obliged by your communicating to me for the information of my Government the following particulars:—

1. The dates of the several licenses to Mr. Bulmer, and the others, who have assigned their rights to him;

2. A description of the limit embraced in each;

3. A copy of the papers and documents (or the originals) in possession of your Government relating to the several limits. This information is needed for the purpose of considering any such arrangement as you suggest, pending the further litigation as to the Indian Title.

I regret very much the delay which has been occasioned by your despatch of November having been mislaid.

I have, etc.,

(Signed) J. B. ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
The Secretary of State,
Ottawa, Ont.

[12. The Lieutenant-Governor to the Secretary of State.]

{ 557 / 1887 }

Government House,
Toronto, 9th February, 1887.

Sir,—My Government have had their attention called to a letter in the Algoma newspapers addressed by Mr. Burgess, as Deputy Minister of the Interior, to S. J. Dawson, M.P., setting forth that a communication had been lately sent to me stating that the Government of Canada would be glad to come to some arrangement with the Government of this Province with respect to licenses to cut timber in the recently disputed territory, "pending a settlement of the question as to the land titles in the territory."

I have to state that, so far as I recollect or am aware, no such communication has been received by me unless you refer to your despatch of the 8th November, which mentions the case of Mr. Bulmer and his company, and no others.

In case any such proposal is contemplated though not yet made, my Government hope that they may at the same time receive a list of all the licenses which, since the making of the Boundary Award, have been granted in respect of the territory now finally decided to be within this Province; with the dates of the licenses, and the limit embraced in each; also copies of all Orders in Council and correspondence with reference to such licenses and limits. According to the judgment of my Government, it would be impossible to consider intelligently any such contemplated proposal as Mr. Burgess suggests without information as to all matters which may be affected by any arrangement.

I observe that Mr. Burgess' letter to Mr. Dawson states that "if the Ontario Government agrees to an arrangement with respect to the licenses, they will be asked to agree to an arrangement of a somewhat similar nature in regard to title to lands in fee simple." My Government are of opinion that the latter subject may be more easily dealt with than the former; and they shall be glad to consider without delay any proposal which your Government may make upon the subject, whether any arrangement as to licenses to cut timber may or may not be proposed by your Government. My Government desire to remind you that whatever has been done by your Government since the making of the Award in granting licenses or otherwise dealing with the lands in the territory referred to, has been done against the protests of the Provincial Government, and that though information has been repeatedly asked for, the Government of this Province have not yet had communicated to them the particulars above mentioned. My Government would be glad to receive the information now, and to consider with promptitude any interim arrangement which your Government may suggest.

I have, etc.,
(Signed) JOHN BEVERLEY ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
The Secretary of State,
Ottawa, Ont.

[13. The Secretary of State to the Lieutenant-Governor.]

{ 758 on 1386 }

Department of the Secretary of State,
Ottawa, 11th February, 1887.

Sir,—I have the honour to acknowledge the receipt of your despatch of the 19th instant, having reference to a letter in the Algoma newspapers, addressed by Mr. Burgess, as Deputy Minister of the Interior, to Mr. S. J. Dawson, M.P., setting forth that a

communication had been lately sent to you stating that the Government of Canada would be glad to come to some arrangement with the Government of Ontario, with respect to licenses to cut timber in the recently disputed territory, "pending a settlement of the question as to the land titles in the territory," and to state that the matter will receive consideration.

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour,
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto, Ont.

[14. THE SECRETARY OF STATE TO THE LIEUTENANT-GOVERNOR.]

$\left\{\begin{matrix}1659\\27594\\1886\end{matrix}\right\}$

DEPARTMENT OF THE SECRETARY OF STATE,
OTTAWA, April 6th, 1887.

SIR,—I have the honour to acquaint you, for the information of your Government, that His Excellency the Governor-General has had under his consideration in Council your despatch of the 9th February last, relating to the question of timber licenses in the so-called "disputed territory," and suggesting that some means should be adopted to quiet the titles to lands in the hands of settlers.

His Excellency's advisers, I am now to state, acquiesce in the desirability of immediate steps being taken to meet the reasonable wishes of the settlers and of others interested in the development of the resources of the country.

There appear to be, it is observed, two classes of cases in the so-called "disputed territory" concerning which it is most desirable that some arrangement should be arrived at with reference to the interests involved in them.

The first, affecting both the cases of settlers and of miners within the area of leases granted for cutting timber, would appear to render necessary a negotiation with the limit holders with a view, if possible, of arriving at a satisfactory settlement.

The most prominent case is that of settlers and holders of mining rights within the lease granted in 1875 to Messrs. Fuller & Company, and subsequently assigned to the Keewatin Lumber Company. The 6th clause of that lease gives to the leaseholder somewhat extraordinary powers, as follows :—

"6. This lease shall vest in said lessees during its continuance the right to take and keep exclusive possession of the lands hereinbefore described, subject to the conditions hereinbefore provided or referred to, and shall vest in the holder or holders hereof all right of property whatsoever in all trees, timber, lumber, and other products of timber cut within the limits of this lease during the continuance hereof, whether such trees, timber, and lumber or products be cut by authority of the holder or holders of this lease or by any other person or persons with or without his or their consent; and this lease shall entitle the said lessees to seize in replevin, revindication, or otherwise, as their property, such timber when the same is found in the possession of any unauthorized person, and also to bring any action or suit at law or in equity against any party unlawfully in possession of any such timber or of any land so leased, and to prosecute all trespassers thereon and other such offenders as aforesaid to conviction and punishment, and to recover damages, if any, and all proceedings pending at the expiration of this lease may be continued and completed as if the same had not expired."

That, unhappily, there is no reservation in the interests of the settlers contained in the lease. Those granted more recently have been modified in that respect, all the recent leases containing the following provisions :—

"2. That this lease or license shall not be allowed to interfere with the settlement of any lands within the 'berths' which may be desirable for settlement, the Minister of the Interior to be the judge of the fact, and the only recourse of the licensee against the ruling of the Minister in favour of permitting settlement within such berths to be that (the licensee) may, within after receiving notice to the above effect from the local agent of Dominion Lands, remove all timber on such lands which may be over ten inches in diameter."

"Further, that this lease or license shall not prevent individual homestead settlers holding permits (but not of the class termed 'special permits') heretofore or hereafter given under the Order in Council dated the 10th of October, 1881, or under any subsequent Order in Council passed in such behalf, from cutting and removing from the land covered by this lease or license such quantity of building timber, fence rails, or firewood as such permit may set forth, and the Government may, notwithstanding this lease or license, give such permit to individual homestead settlers from time to time, under said Order in Council or any subsequent Orders in Council."

It would appear that a decision has already been given by Mr. Justice O'Connor, on a suit of ejectment brought by the leaseholder against William McCarthy, who appears to have purchased the rights of a squatter in advance of the license, to have paid $1,000 for the squatter's right, and to have made considerable improvements since. The decision of the Court, however, was that he took nothing by the purchase, and that by the grant from the Crown of the lease not only the land, but the improvements which he had made upon it, belonged to the leaseholder.

It is further observed that there are other cases of mining rights, including the "Gold Hill Company," "Keewayden Mining Company," "The Heman Mining Company," "The Jacobs and Vokes Company," "The Maiden Mining Company," "The Minnesabic Mining Company," "The Gibbons Slate Quarry," and "The Mica Mining Company," on Falcon Island—all of which, it is understood, have been more or less developed, and are all within the territory covered by the lease to Messrs. Fuller & Company.

It is most desirable, His Excellency is advised, that, if possible, some arrangement should be arrived at by which the rights of miners should be secured, and the development of this great industry promoted. That there are besides a considerable number of settlers in the Rainy River District who went in and settled on lands surveyed by the Dominion Government, and who have not yet received their titles. These cases might be settled, His Excellency is advised, by the issue of a joint title from the Governments of Canada and of Ontario, to be afterwards confirmed by one or other when the final decision is given in reference to the Indian Title in that territory. That at Rat Portage a considerable number of persons have made surveys, have squatted upon the land, erected buildings, and, in some cases, have sold their property which has passed into the hands of second or third parties. Some of these are upon the Hudson's Bay section, and great uncertainty and inconveniences have arisen in the absence of satisfactory title. The progress of the town is retarded, the holders of these lands cannot afford to put up good buildings, and the cost of insurance on such buildings as are erected is so great as to render insurance practically impossible. In some cases the surveys overlap each other.

I am to suggest, therefore, that with the concurrence of your Government, a joint commission be issued to settle the boundaries of these lots and to grant joint titles to the holders, so that the inconvenience under which they now labour may be removed and the prosperity of the town assured.

That as to mining locations outside of the timber limits, it is most important that the same plan should be adopted for acquiring titles by the issue of joint title.

It is understood that very large sums of money, aggregating, it is said, over $150,000, have been expended by persons in the development of these mining locations, but the absence of title renders it most difficult to prosecute the work in which they are engaged, and greatly retards the interests of the country; and His Excellency's

advisers therefore urge most strongly that your Government be moved to unite in some common effort by the issue of joint titles, or otherwise, to relieve the settlers in the so-called "disputed territory," and those engaged in the development of the great mining interests of that territory from the uncertainty under which they are now labouring.

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto, Ont.

[15. The Secretary of State to the Lieutenant-Governor.]

Department of the Secretary of State,
Ottawa, 28th April, 1887.

Sir,—I have the honour to acquaint you for the information of your Government that His Excellency the Governor-General has had under his consideration in Council your despatch of the 1st February last requesting information as to the following particulars, viz. :—

1. The dates of the several licenses to Mr. Bulmer and the others who have assigned their rights to him.

2. A description of the limit embraced in each.

3. A copy of the papers and documents (or the originals in possession of this Government) relating to the several limits.

In reply thereto, I have now to transmit to you under separate cover, registered, a copy of an Order in Council upon the subject approved by His Excellency on the 29th ultimo, together with the papers* therein specifically enumerated.

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto, Ontario.

[16. *Enclosure with above.*]

Certified Copy of a Report of a Committee of the Honourable the Privy Council, Approved by His Excellency the Governor-General-in-Council on the 29th March, 1887.

The Committee of the Privy Council have had under consideration a despatch dated 1st February, 1887, from the Lieutenant-Governor of Ontario, requesting information as to the following particulars :—

1. The dates of the several licenses to Mr. Bulmer and the others who have assigned their rights to him.

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*Note.—The papers referred to being very voluminous, are not included in this Sessional Paper.

2. A description of the limit embraced in each.

3. A copy of the papers and documents (or the originals) in possession of your Government relating to the several limits.

The Minister of the Interior, to whom the despatch was referred, submits for transmission to the Lieutenant-Governor the following information :—

1. A schedule shewing the dates of the several licenses issued in favour of Mr. Bulmer and others who have assigned their rights to him, together with a description of the berth embraced in each license.

2. Copies of the papers and documents in possession of the Department of the Interior relating to the several limits.

3. The papers, the subject of this report, are herewith scheduled from " A " to " E.'

The Minister thinks it would also be proper to furnish for the convenience of the Government of Ontario the following statement of the contents of the papers transmitted :—

On the 1st November, 1883, an Order in Council was passed authorizing the Minister of the Interior to issue a license in favour of Mr. F. T. Bulmer, of Rat Portage, for a timber berth of fifty square miles, situated on the shores of Crow Lake, in the Lake of the Woods district, on condition that he surveyed the berth under instructions from the Surveyor-General within one year and erected a mill within three years from and after the date of the Order in Council.

The returns of the survey of the berth were duly made to his department, were found correct, were accepted, and a yearly license issued to Mr. Bulmer covering the calendar year 1884. This license was renewed for 1885, but, on account of the decision rendered by the Judicial Committee of the Imperial Privy Council in regard to the western and northwestern boundaries of the Province of Ontario, he has not granted a renewal of the license for 1886.

In consequence of having been deprived of a portion of the berth hereinbefore referred to, because by inadvertence a berth granted to another applicant overlapped it, Mr. Bulmer was permitted, by Order in Council dated the 9th October, 1884, to select and survey four and a half square miles of timber land on the southern shore of Whitefish Bay, Lake of the Woods, the returns of which survey were fyled in the Department of the Interior in October, 1885, and being in accordance with the requirements of the Order in Council of the 9th of October, 1884, and the Timber Regulations, they were accepted, but no license for the said four and a half square miles has been issued to Mr. Bulmer on account of the decision of the Judicial Committee of the Imperial Privy Council hereinbefore referred to, respecting the western and northwestern boundaries of the Province of Ontario.

On the 29th November, 1883, an Order in Council was passed authorizing the issue of a license in favour of Mr. H. H. Bailey, of Cookshire, in the Province of Quebec, to cut timber on a berth of fifty square miles situated on the southern shore of Sabaskong Bay on the same conditions as mentioned in the case of Mr. F. T. Bulmer. Mr. Bailey made due compliance with those conditions, fyled the returns of survey of the berth in the Department of the Interior on the 24th July, 1884, which being found satisfactory, a license was issued to Mr. Bailey for the calendar year 1884, and was renewed for the year 1885, but not for the year 1886 for the reasons stated in the case of Mr. Bulmer.

On the 1st December, 1883, an Order in Council was passed authorizing the issue of a license to Mr. Henry Bulmer, jr., of Montreal, to cut timber on a berth of fifty square miles on the Height of Land Lake, a tributary of the Lake of the Woods, on the same conditions as mentioned in the case of Mr. F. T. Bulmer, and the same being duly complied with and the returns of survey found correct a license was issued to Mr. H. Bulmer, jr., for the said berth for the calendar year 1885, but not renewed for 1886 on account of the decision of the Judicial Committee of the Imperial Privy Council hereinbefore mentioned.

On the 5th February, 1884, the Minister of the Interior was authorized by Order in Council to issue a license in favour of Mr. Henry Bulmer, jr., mentioned in the next preceding paragraph, to cut timber on a berth of fifty square miles on Sabaskong Bay, competition having been invited for the acquisition of this berth, and Mr. Bulmer having offered the highest bonus therefor. The conditions in this instance were the same as in the other cases mentioned, and the same being duly complied with and the returns found correct, a license was issued to Mr. Bulmer for the calendar year 1884, and was renewed for 1885, but not for 1886 for the same cause as hereinbefore mentioned.

On the 21st December, 1883, the Minister of the Interior was authorized by Order in Council to issue a yearly license in favour of Mr. George T. Hartt, of Montreal, Province of Quebec, to cut timber on a berth of fifty square miles in the neighbourhood of Crow Lake, in the Lake of the Woods District. The conditions in this instance were the same as in the other cases mentioned, and the same being duly complied with, and the returns of the survey of the berth found correct, a license was issued in favour of Mr. Hartt for the calendar year 1885, but not renewed for 1886, for the same causes as hereinbefore mentioned.

On the 5th February, 1884, the Minister of the Interior was authorized by Order in Council to issue a yearly license in favour of Mr. A. C. Williamson, of Montreal, Province of Quebec, to cut timber on a berth of fifty square miles on the Clear Water and Height of Land Lakes, in the Lake of the Woods District. Competition had been invited for the acquisition of this berth, and Mr. Williamson offered the highest bonus therefor. The conditions in this instance were the same as in other cases mentioned, and the same being duly complied with, and the returns of the survey of the berth found correct, a license was issued to Mr. Williamson for the calendar year 1885, but was not renewed for 1886. The ground rent of the said timber berths has been paid up to the 31st December, 1885, and the rent for 1886 was offered, but has not been accepted. The Crown dues upon the sales of the lumber that has been manufactured from timber taken off these berths, have been paid up to the 30th June, 1885.

Mr. Henry Bulmer, junior, has fyled assignments to himself and associates from the persons hereinbefore mentioned, of their interests in the several timber berths mentioned herein, and renews his request that licenses to cut timber upon the said berths be issued in favour of himself and associates.

Assignments of the said berths have also been fyled by Mr. Bulmer and his associates in favour of Mr. F. H. Matthewson, Manager of the Bank of Ottawa in Winnipeg; these latter assignments, however, have not been accepted.

The Committee concurring in the report of the Minister of the Interior, recommend that authority be granted to transmit the papers as per schedule, together with a copy of this minute, to the Lieutenant-Governor of Ontario for the use and information of his Government.

All which is respectfully submitted for your Excellency's approval.

(Signed) JOHN J. McGEE,
Clerk Privy Council.

To the Honourable,
THE SECRETARY OF STATE,
Ottawa.

[17. Schedule covered by Secretary of State's Despatch, 28th April, 1887.]

Schedule shewing the names of those persons in whose favour yearly licenses were issued by the Dominion Government to cut timber in that part of the country known as the "Disputed Territory," in which Messrs. F. T. Bulmer & Co. became interested.

Name and Address.	Date of O. in C.	Date of License.		Description.	Remarks.
		1884.	1885.		
F. T. Bulmer, Rat Portage.....	1st Nov., 1883	28th July	22nd June	Timber berth No. 303, as shewn upon a plan of survey thereof, attached to copy of file No. 3255, T. and M.	License for 1885 expired on 31st December of that year and has not been renewed.
H. Bulmer, Jr., Montreal.....	5th Feb., 1884	4th Sept.	20th June	Timber berth No. 363, as shewn upon a plan of survey thereof, attached to copy of file No. 3115, T. and M.	License for 1885 expired on 31st December of that year and has not been renewed.
H. H. Bailey, Cookshire, Que.....	29th Nov. 1883	22nd Nov.	28th April	Timber berth No. 342, as shewn upon a plan of survey thereof, attached to copy of file No. 2350, T. and M.	License for 1885 expired on 31st December of that year and has not been renewed.
George F. Hartt.....	21st Dec., 1883	.....	30th March	Timber berth No. 351, as shewn upon a plan of survey thereof, attached to copy of file No. 8508, T. and M.	
H. Bulmer, Jr., Montreal, Que....	1st Dec., 1883	.....	23rd June	Timber berth No. 343, as shewn upon a plan of survey thereof, attached to copy of file No. 3115, T. and M.	License expired 31st December, 1885 and has not been renewed.
A. C. Williamson, Shawville, Que..	5th Feb., 1884	.....	22nd June	Timber berth No. 367, as shewn upon a plan of survey thereof, attached to copy of file No. 8359, T. and M.	License expired 31st December, 1885 and has not been renewed.

[18. The Lieutenant-Governor to the Secretary of State.]

Government House,
Toronto, 30th April, 1887.

Sir,—I have the honour to acknowledge the receipt of your despatch of 28th April, (No. 2116 on 4909) referring back to a letter of 1st February, and enclosing in a separate registered letter a copy of an Order in Council regarding Mr. Bulmer's limits.

I have, etc.,

(Signed) J. B. ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable,
The Secretary of State,
Ottawa.

[19. The Secretary of State to the Lieutenant-Gonernor.]

Department of the Secretary of State,
Ottawa, 13th May, 1887.

Sir,—I have the honour to acquaint you for the information of your Government that His Excellency the Governor-General, has had under his consideration in Council your despatch, dated the 9th February, 1887, relative to a letter from Mr. Burgess, Deputy of the Minister of the Interior, to Mr. S. J. Dawson, on the subject of land titles in the disputed territory.

With regard thereto, it is observed by His Excellency's advisers, that the passages in quotation marks in the despatch hardly convey a correct impression of the contents of the letter from Mr. Burgess referred to therein, and a copy of which is herewith transmitted you for the information of your Government.

It is further observed that although one case only was referred to in the despatch of the 8th November last, which is the communication referred to in the letter addressed by Mr. Burgess to Mr. Dawson, the principle involved in the settlement of that case would naturally apply to all the others, and the case of Mr. Bulmer was specially mentioned, because it was the only one in which under the authority of a yearly license, a large expenditure of money had been made in the erection of a saw mill and active operations in the manufacture of lumber were being carried on within the territory in dispute, when the decision of the Judicial Committee of the Privy Council in regard to the westerly and north-westerly boundaries of the Province of Ontario was rendered.

His Excellency's advisers, however, deem it proper, in anticipation of a discussion of the whole question, at once to meet the wishes of your Government by submitting in addition to the information respecting the berths in which Mr. Bulmer and his associates are interested, called for by a despatch from your Honour, dated the 1st February, a complete list which I now transmit to you for the use and information of your Government, of other licenses granted by the Department of the Interior affecting timber in the disputed territory, since the date of the decision of the Judicial Committee of the Privy Council, a description of the berth embraced in each license, and copies of the correspondence and Orders in Council having reference to the same, including the report of the Minister of Justice in reference thereto, as set forth in the schedule herewith numbered.

I have to add that His Excellency is further advised that the only licences renewed

for berths within the disputed territory during the year 1885, were the licenses to Mr. Bulmer and his associates, referred to in the despatch, dated 8th November last, and a license to the Keewatin Lumbering Company.

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour
The Lieuenant-Governor of Ontario,
Toronto, Ont.

[20. The Deputy Minister of the Interior, to S. J. Dawson, M. P.]

(*Enclosure No. 1 with above.*)

Department of the Interior,
Ottawa, 10th December, 1886.

Sir,—I am directed to inform you that the Department of the Secretary of State has transferred to this Department a petition from the inhabitants of Rat Portage to His Excellency the Governor-General of Canada, forwarded by you, in which the petitioners ask that an immediate arrangement be arrived at between the Government of the Province of Ontario and the Government of Canada, whereby patents to land in the disputed territory may be forthwith granted either by joint or several authority as may be seen fit, that an arrangement be entered into with the Keewatin Lumber Company for surrendering for due consideration the right they claim to have to the land and mineral on the islands of the Lake of the Woods and on adjoining portions of the mainland.

I am to say in reply, that a communication has been lately sent to the Lieutenant-Governor of the Province of Ontario, stating that the Government of Canada will be glad to come to some arrangement with the Government of Ontario, under which parties to whom licenses to cut timber in the disputed territory had been issued by this Department previous to the decision of the Judicial Committee of the Privy Council, and who had expended a large sum of money in erecting mills, etc., might, pending a settlement of the question as to the land titles in the territory affected by the decision of the Judicial Committee of the Imperial Privy Council, be permitted to continue to cut and manufacture timber on the berths acquired by them before the said decision was rendered.

If the Ontario Government agrees to this arrangement they will be asked to agree to an arrangement of a somewhat similar nature in regard to title to lands in fee simple.

The lease to the Keewatin Lumber Company issued on the 22nd of July, 1875, vests in the lessee during its continuance, the right to take and keep exclusive possession of the lands described therein, in addition to the right of cutting the timber on the said lands, but if it is ultimately settled, that this Government has the right to deal with the lands in the disputed territory, an effort will be made to effect an arrangement with the Keewatin Lumber Company, whereby they will relinquish any rights they may claim to the lands described in the lease, with the exception of the right to cut timber thereon. Such an arrangement was about to be consummated between the Company and this Department at the time the Judicial Committee of the Privy Council gave judgment in the boundary case.

I am, etc.,

(Signed) A. M. BURGESS,
Deputy of the Min. of the Interior.

S. J Dawson, Esq., M. P.,
Port Arthur, Ont.

(21. *Enclosure No. 2.*)

OTTAWA, 25th September, 1884.

Memorandum respecting the cutting of timber in the Disputed Territory.

The undersigned has the honour to report to the Council that from time to time during the twelve months preceding the reference of the dispute in regard to the eastern boundary of the Province of Manitoba to the Judicial Committee of the Imperial Privy Council, applications were made for licenses to cut timber within the region known as the disputed territory, by persons who had incurred considerable expense in exploring for timber, and in many of these cases the undersigned promised to submit the application for the favourable consideration of the Governor in Council.

For various reasons, but chiefly because of defective descriptions which required to be corrected, or made more definite before they could be plotted on the maps of the Department of the Interior, these applications had not been submitted by the undersigned at the time of the decision in the boundary case by the Judicial Committee of the Privy Council.

The undersigned is of opinion that it would be just to many of these applicants that their applications should be granted, provided this can be legally done, and he recommends that the matter be referred to the Minister of Justice for his opinion.

Respectfully submitted,

(Signed) D. L. MACPHERSON,
Minister of the Interior.

To the Honourable,
THE PRIVY COUNCIL.

(22. *Enclosure No. 3.*)

DEPARTMENT OF THE INTERIOR,
OTTAWA, 25th September, 1884.

Memorandum respecting cutting timber on Hunter's Island.

The undersigned has the honour to report that during the month of August, 1883 Orders in Council were passed authorizing the grant of licenses to cut timber over the whole of what is known as "Hunter's Island," on the tributaries of Rainy Lake; and, under the authority of the said Orders in Council, surveyors have, during the interval, been employed in surveying the said berths in accordance with the provisions of the Crown Timber Regulations, and the undersigned is informed by the grantees that the said surveys have been completed, and that the plans are now being prepared. The grantees now apply to the undersigned for the issue of the usual annual licenses to cut timber on the berths in question, and they ask that these licenses may issue in advance of the filings of the returns of survey in the Department of the Interior—1st. Because, in order to permit of the cutting of the necessary logs during the coming season, it is necessary that they should at once commence to send in supplies and working material; and, in the second place, because the several persons to whom the undersigned was authorized by Order in Council to grant these timber berths have come to an agreement under which they propose to operate all their limits together, and as the licenses to be issued will cover the whole of Hunter's Island, there is no possibility of any conflict or difficulty arising out of the issue of the licenses at the present time.

Under ordinary circumstances the undersigned would be disposed to accede to this request; but, in view of the recent decisions of the Judicial Committee of the Imperial Privy Council, the undersigned recommends that the question be referred to the Minister of Justice for his opinion as to whether the licenses applied for can properly issue.

The undersigned has, further, the honour to report that there are other cases pending in his department at the present in which the necessary authority of Council has been obtained, the surveys have been filed and accepted by the Department as correct, and all that remains to be done is to issue the licenses.

For the reason already set forth, the undersigned also recommends that the opinion of the Minister of Justice be obtained as to whether these licenses can properly issue.

Respectfully submitted.

(Signed) D. L. MACPHERSON,
Minister of the Interior.

The Honourable,
THE PRIVY COUNCIL.

(23. *Enclosure No. 4.*)

DEPARTMENT OF JUSTICE.
OTTAWA, 30th September, 1884.

To His Excellency the Governor-General in Council:

The undersigned begs leave to report that he has had under consideration two reports of the Minister of the Interior dated the 25th inst., and referred to him by your Excellency in Council on the 29th instant, relative to the issuing of licenses to cut timber on what was known as the Disputed Territory between Ontario and Manitoba.

As the provisions of the Act which it is proposed to invite the Parliament of the United Kingdom to pass to confirm the decision of the Judicial Committee of Her Majesty's Privy Council with respect to the boundaries of Ontario and Manitoba, are not known, and inasmuch as the Crown, as represented by the Government of Canada, acquired, by surrender from the Indians, their right and their title in lands in question, and is in possession thereof, the undersigned is of opinion that there is no objection to the Minister of the Interior giving effect to the arrangements which he had made anterior to the decision, as mentioned in his report, by issuing licenses in the usual way.

(Signed) A. CAMPBELL,
Minister of Justice.

(24. *Enclosure No. 5.*)

DEPARTMENT OF THE INTERIOR.
OTTAWA, 3rd October, 1884.

Memorandum respecting persons authorized to cut timber in the Disputed Territory.

The undersigned has the honour to submit the annexed list of the names of persons to whom he has been authorized by Council to issue licenses to cut timber in that part of the North-West now or lately known as the Disputed Territory, and who have not yet received instructions from his Department for the surveys of their berths.

The undersigned recommends, in accordance with the advice of the Minister of Justice, that the several parties enumerated in the said list be furnished with the necessary instructions for the surveys of their berths, and that on receipt of the returns thereof, and they are approved by his Department, he be authorized to issue licenses in their favour.

Respectfully submitted.

(Signed) D. L. MACPHERSON,
Minister of the Interior.

The Honourable,
THE PRIVY COUNCIL.

(26. *Enclosure No. 6.*)

List of the names of persons to whom the Minister of the Interior has been authorized by Council to issue licenses to cut timber in that part of the North-west now or lately known as the Disputed Territory, and who have not yet received instructions from this Department for the survey of their berths.

Name.	Address.	Date of O. in C.	Remarks.
Stewart Mulvey	Winnipeg	30th April, 1884.	
Alex. Michaud	"	24th Nov., 1883.	
G. W. Monk	South March	21st May, 1883.	
Wm. McCarthy	Rat Portage	21st Dec., 1883.	Paid bonus of $1,000.
" "	"	29th Nov., 1883.	
J. S. McCracken	Ottawa	23rd May, 1884.	
Hugh Smiley	Rat Portage	29th Nov., 1883.	
Oliver, Isbester & Gibbons	"	21st Dec., 1883.	Paid 1 year ground rent.
Wm. Shields	Toronto	29th Nov., 1883.	
P. McRae	Port Arthur	17th May, 1884.	Paid 1 year ground rent.
T. J. Kennedy	Rat Portage	29th Nov., 1883.	
J. R. McDonald	"	29th Nov., 1883.	
F. M. Quigley	Winnipeg	24th Nov., 1883.	
J. J. McDonald	Rat Portage	29th Nov., 1883.	
F. A. Beveridge	Appleton, Wis., U.S.	30th April, 1884.	
W. B. Beveridge	"	30th April, 1884.	
R. C. Throop	Ottawa	1st Dec., 1883.	
St. Catharines Milling and Lumber Co	"	27th Dec., 1883.	
Aaron Squires	Toronto	1st Dec., 1883.	
John Shields	"	21st Dec., 1883.	
John H. Beaty	"	6th Dec., 1883.	
D. Tisdale	Simcoe	6th Dec., 1883.	
H. Staunton	Rat Portage	13th May, 1884.	Paid bonus, $255.
J. J. Foster	"	15th May, 1884.	Paid bonus, $255.
Jos. Kavanagh	Ottawa	29th Nov., 1883.	
Thos. Smith	"	18th May, 1884.	
Chabot & Co	"	18th Feb., 1884.	
R. G. Brett	Winnipeg, Man	19th April, 1884.	
Theo. Viau	Hull, Q.	11th June, 1884.	
S. C. Sanders	Winnipeg	23rd July, 1884.	
Walter Moore	"	23rd July, 1884.	
John Ross	Homer, O	12th May, 1884.	Paid 1 year's ground rent.
Geo. D. Farmer	Lancaster	29th April, 1884.	
W. E. Cornell	Toronto	24th May, 1884.	
T. T. W. Bready	Winnipeg, Man	30th April, 1884.	
H. J. Scott	Toronto, Ont	14th Mar., 1884.	
John Paisley	Winnipeg, Man	29th April, 1884.	
A. J. J. Jackson	"	30th April, 1884.	
Sargent R. Brock	River Desert, Q.	30th April, 1884.	
T. W. Currier	Ottawa, O.	12th April, 1884.	
Frank Thompson	Winnipeg, Man	24th Mar., 1884.	Paid 1 year's ground rent.
I. D. Foreman	"	18th Mar., 1884.	Paid 1 year's ground rent.
Edward Morgan	"	17th April, 1884.	
J. W. McRae	Ottawa, O.	1st Mar., 1884.	
Wm. McKay	"	5th Feb., 1884.	
Wm. Broder	Morrisburg, O.	30th April, 1884.	
Hiram Robinson	Ottawa, O.	17th April, 1884.	
Thomas Birkett	"	23rd Jan., 1884.	Paid 1 year's rent.
John Stewart	Chelsea, Q.	21st Dec., 1883.	
McArthur, Boyle & Campbell	Winnipeg, Man	16th May, 1884.	Paid bonus of $2,500.
John F. McIntosh	Toronto, O.	30th April, 1884.	
Wm. Scott	Winnipeg, Man	30th April, 1884.	
Joseph Riopell	Ottawa	29th Aug., 1883.	
H. Montplaisir	Cap de la Magdelin	19th Dec., 1883.	
H. Robillard	Ottawa	29th Aug., 1883	

(27. *Enclosure No. 7.*)

DEPARTMENT OF THE INTERIOR.
OTTAWA, 3rd October, 1884.

Memorandum respecting persons entitled to receive licenses.

The undersigned has the honour to submit the annexed list of persons to whom he has been authorized by Council to issue licenses to cut timber in that part of the North-West now or lately known as the Disputed Territory, and who have filed the returns of the surveys of their berths in his Department, and are entitled to receive their licenses.

The undersigned recommends, in accordance with the advice of the Minister of Justice, that he be authorized to issue the licenses.

Respectfully submitted.

(Signed) D. L. MACPHERSON,
Minister of the Interior.

The Honourable,
THE PRIVY COUNCIL.

(28. *Enclosure No. 8.*)

List of Persons to whom the Minister of the Interior has been authorized by Council to issue licenses to cut timber in that part of the North-West now or lately known as the Disputed Territory, and who have filed the returns of the surveys of their berths in his Department.

NAME.	Address.	Date of Order in Council.
F. T. Bulmer	Montreal	1st November, 1883.
H. Bulmer	"	5th February, 1884.
H. H. Bailey	Rat Portage	29th November, 1883.
John Bain	Toronto	21st December, 1883.
Smith & Muir	Hamilton	27th October, 1883.
Thos. Marks	Port Arthur	18th February, 1884.

(29. *Enclosure No. 9.*)

CERTIFIED COPY OF A REPORT OF A COMMITTEE OF THE HONOURABLE THE PRIVY COUNCIL, APPROVED BY HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL ON THE 21st OCTOBER, 1884.

On a memorandum, dated 3rd October, 1884, from the Minister of the Interior, representing that licenses to cut timber in the Province of Manitoba have been granted to

the following persons under authority of the several Orders in Council opposite their respective names :—*

Name.	Address.	Date of Order in Council.
John McDonald	Toronto	11th August, 1883.
Hugh McDonald	"	" "
H. Quetton St. George	"	" "
C. J. Campbell	"	" "
F. C. Campbell	"	" "
L. Oliver	Barrie	" "
Thomas Shortiss	Toronto	" "
C. C. Small	"	" "
W. B. Scarth	"	" "
Frank Arnoldi	"	" "
J. S. Aikins	"	" "
David Blain	"	" "
Henry O'Brien	"	" "
L. R. O'Brien	"	" "
John Ginty	"	" "
R. Longtino } Thos. Shortiss.	Ottawa	27th October, 1884.
R. Lecourt }	"	" "
N. F. Paterson	Port Perry	21st December, 1883.
A. C. Williamson	Montreal	5th February, 1884.
George F. Hartt	"	21st December, 1883.
H. Bulmer, jr	"	1st December, 1883.
Messrs. Fowler & Muirhead, and transferred to the Rainy Lake Lumber Co	Rat Portage	5th July, 1880.
R. T. Sutton	Toronto	29th November, 1883.
Bain & Paterson	"	21st December, 1883.
James McKnight	La Salette	1st December, 1883.
D. E. Sprague	Winnipeg	23rd January, 1884.
J. B. Sprague	"	" "
G. J. Chauncey	"	20th March, 1884.
T. G. Blackstock	Toronto	6th December, 1883.
E. W. Nesbitt	Woodstock	28th January, 1884.
Alex. Moffatt	Winnipeg	29th August, 1883.

and who have obtained instructions for the surveys of the berths, but have have not yet filed the returns as required.

The Minister states that the timber limits granted to the above mentioned persons, are situated in what is known as the Disputed Territory, between Ontario and Manitoba, and are among the cases referred to in the Report of the Minister of Justice, dated 30th September, 1884, and he recommends that on receipt from the said parties of the returns of the surveys of their berths, and approval thereof, licenses be granted accordingly to the several parties above named.

The Committee advise that licenses be granted as above recommended.

(Signed) JOHN J. McGEE,
Clerk Privy Council.

To the Honourable,
The Minister of the Interior.

* Note.—"As will be seen by the memo. attached, the statement in this Order is incorrect—no licenses had been issued; authority to issue them had alone been granted by Council."—Memo. by Clerk of the Privy Council.

(30. *Enclosure No. 10.*)

DEPARTMENT OF THE INTERIOR,
OTTAWA, 3rd October, 1884.

Memorandum respecting persons who had not obtained surveys of berths accorded to them.

The undersigned has the honour to submit the annexed list of the names of persons to whom he has been authorized by Council to issue licenses to cut timber in that part of the North-West, now or lately known as the "Disputed Territory," and who have obtained instructions for the surveys of the berths accorded to them, but who have not yet filed the returns thereof in his department.

The undersigned recommends, in accordance with the advice of the Minister of Justice, that on receipt from the said parties of the returns of the surveys of their berths, and they are approved by his department, he be authorized to issue the licenses in their favour.

Respectfully submitted,

(Signed) D. L. MACPHERSON,
Minister of the Interior.

The Honourable,
THE PRIVY COUNCIL.

(31. *Enclosure No. 11.*)

LIST of the names of persons to whom the Minister of the Interior has been authorized by Council to issue licenses to cut timber in that part of the North-West now, or lately known, as the "Disputed Territory," and who have obtained instructions for the surveys of the berths accorded to them, but have not yet filed the Returns thereof in his Department.

NAME.	Address.	Date of O. in C.
John Macdonald	Toronto, Ont	11th August, 1883.
Hugh McDonald	" "	" " "
H. Quetton St. George	" "	" " "
C. J. Campbell	" "	" " "
F. C. Campbell	" "	" " "
L. Oliver	Barrie "	" " "
Thomas Shortiss	Toronto, "	" " "
C. C. Small	" "	" " "
W. B. Scarth	" "	" " "
Frank Arnoldi	" "	" " "
J. S. Aikins	" "	" " "
David Blain	" "	" " "
Henry O'Brien	" "	" " "
L. R. O'Brien	" "	" " "
John Ginty	" "	" " "
R. Longtino } Thomas Shortiss R. Lecourt }	Ottawa, "	27th October, "
N. F. Paterson	Port Perry, O	21st December, "
A. C. Williamson	Montreal, Q	5th February, 1884.
George F. Hartt	" "	21st December, 1883.
H. Bulmer, jun	" "	1st December, 1883.
Rainy Lake Lumber Company, S. H. Fowler	Rat Portage	5th July, 1880.
R. T. Sutton	Toronto, Ont	29th November, 1883.
Bain & Paterson	" "	21st December, 1883.
James McKnight	La Salette	1st " "
D. E. Sprague	Winnipeg, M	23rd January, 1884.
J. B. Sprague	" "	" " "
G. J. Chauncey	" "	20th March, 1884.
T. G. Blackstock	Toronto, Ont	6th December, 1883.
E. W. Nesbitt	Woodstock, Ont	28th January, 1884.
Alex. Moffatt	Winnipeg, M	29th August, 1883.

(32. *Enclosure No. 12.*)

CERTIFIED COPY OF A REPORT OF A COMMITTEE OF THE HONOURABLE THE PRIVY COUNCIL, APPROVED BY HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL, ON THE 21ST OCTOBER, 1884.

* On a memorandum, dated 3rd October, 1884, from the Minister of the Interior, representing that licenses to cut timber in the Province of Manitoba have been granted to the following persons, under authority of the several Orders in Council opposite their respective names :—

NAME.	Address.	Date of Order in Council.
Stewart Mulvey	Winnipeg	30th April, 1884.
Alex. Michaud	"	24th November, 1883.
G. W. Monk	South March	21st May, 1883.
Wm. McCarthy	Rat Portage	21st December, 1883.
do	"	29th November, 1883.
J. S. McCracken	Ottawa	23rd May, 1884.
Hugh Smiley	Rat Portage	29th November, 1883.
Oliver, Isbister & Gibbins	"	21st December, 1883.
William Shields	Toronto	29th November, 1883.
P. McRae	Port Arthur	17th May, 1884.
T. J. Kennedy	Rat Portage	29th November, 1883.
J. R. McDonald	"	" " "
F. M. Quigly	Winnipeg	24th November, 1883.
J. J. McDonald	Rat Portage	29th November, 1883.
F. A. Beveridge	Appleton, Wis. U.S.	30th April, 1884.
W. B. Beveridge	" "	" " "
R. C. Throop	Ottawa	1st December, 1883.
St. Catherines Milling and Lumber Company	"	27th December, 1883.
Aaron Squires	Toronto	1st December, 1883.
John Shields	"	21st December, 1883.
John H. Beaty	"	6th December, 1883.
D. Tisdale	Simcoe	" " "
H. Staunton	Rat Portage	13th May, 1884.
J. J. Foster	"	15th May, 1884.
Jo eph Kavanagh	Ottawa	29th November, 1883.
Thomas Smith	"	18th May, 1884.
Chabot & Co	"	18th February, 1884.
R. G. Brett	Winnipeg	19th April, 1884.
Theo. Viau	Hull	11th June, 1884.
S. C. Sanders	Winnipeg	23rd July, 1884.
Walter Moore	"	" " "
John Ross	Homer	12th March, 1884.
Geo. D. Farmer	Ancaster	29th April, 1884.
W. E. Cornell	Toronto	24th March, 1884.
T. T. W. Bready	Winnipeg	30th April, 1884.
H. J. Scott	Toronto	14th March, 1884.
John Paisley	Winnipeg	29th April, 1884.
A. J. J. Jackson	"	30th April, 1884.
Sargeant R. Brook	River Desert	" " "
T. W. Currier	Ottawa	12th " "
Frank Thompson	Winnipeg	24th March, 1884.
John D. Foreman	"	18th " "
Edward Morgan	"	17th April, 1884.
J. W. McRea	Ottawa	1st March, 1884.
William McKay	"	5th February, 1884.
William Broder	Morrisburg	30th April, 1884.
Hiram Robinson	Ottawa	17th April, 1884.
Thomas Birkett	"	23rd January, 1884.
John Stewart	Chelsea	21st December, 1883.
McArthur, Boyle and Campbell	Winnipeg	16th May, 1884.
John F. McIntosh	Toronto	30th April, 1884.
William Scott	Winnipeg	" " "
Joseph Riopell	Ottawa	29th August, 1883.
H. Monplaisir	Cap. de la Magdal'ne	19th December, 1883.
H. Robillard	Ottawa	29th August, 1883.

and who have not yet received instructions for the survey of their berths.

*NOTE. - "As will be seen by the memo. attached, the statement in this Order is incorrect. No licenses had been issued; authority to issue them had alone been granted by the Council." -Memo. by Clerk of the Privy Council.

The Minister states that the timber limits granted to the above-mentioned persons are situated on what is known as the disputed territory between Ontario and Manitoba, and are among the cases referred to in the report of the Minister of Justice, dated 30th September, 1884, and he recommends that the several parties enumerated in the above list be furnished with the necessary instructions for the surveys of their berths, and that on receipt of the returns and approval thereof, licenses be granted accordingly to the several parties above named.

The Committee advise that licenses be granted as above recommended.

(Signed) JOHN J. McGEE.
Clerk, Privy Council.

To the Honourable
THE MINISTER OF THE INTERIOR.

(33. *Enclosure No. 13.*)

CERTIFED COPY OF A REPORT OF A COMMITTEE OF THE HONOURABLE THE PRIVY COUNCIL, APPROVED BY HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL, ON 25TH OCTOBER, 1884.

*On a memorandum, dated 3rd October, 1884, from the Minister of the Interior, representing that licenses to cut timber in the Province of Manitoba, have been granted to the following persons, under authority of the several Orders in Council opposite their respective names :—

NAMES.	Address.	Date of Order in Council.
F. T. Bulmer	Montreal	1st November, 1883.
H. Bulmer	do	5th February, 1884.
H. H. Bailey	Rat Portage	29th November, 1883.
John Bain	Toronto	21st December, 1883.
Smith & Muir	Hamilton	27th October, 1883.
Thomas Marks	Port Arthur	18th February, 1884.

and who have filed the returns of the surveys of their berths.

The Minister states that the timber limits granted to the above-mentioned persons are situated in what is known as the disputed territory between Ontario and Manitoba, and are among the cases referred to in the report of the Minister of Justice, dated 30th September, 1884, and he recommends that the several parties enumerated in the above list begranted l icenses accordingly.

The Committee advise that licenses be granted as above recommended.

(Signed) JOHN J. McGEE,
Clerk, Privy Council.

To the Honourable
THE MINISTER OF THE INTERIOR.

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* NOTE.—"As will be seen by the memo. attached, the statement in this Order is incorrect. No licenses had been issued; authority to issue them had alone been granted by Council."—Memo. by the Clerk of the Privy Council.

(34. *Enclosure No. 14.*)

SCHEDULE shewing the names of those persons in whose favor yearly licenses were issued by the Dominion Government to cut timber in that part of the country known as the "Disputed Territory."

Name and Address.	Date of O. C.	Date of License.		Description.	Remarks.
		1884.	1885.		
F. T. Bulmer, Rat Portage.....	1st November, 1883.	28th July.....	22nd June	Timber berth No. 303, situate on the south shore of Crow Lake, containing an area of 36.22 sq. miles, more or less, as shewn on a plan of survey of said berth made by D.L.S. Poudrier, dated 16th July, 1884, and of record in the Timber, Mineral and Grazing Lands Office, of the Department of the Interior, a copy of which is attached to the copy of Mr. Bulmer's file.	License for 1885 expired on the 31st December of that year, and has not been renewed.
L. R. O'Brien, Toronto, Ont.....	11th August, 1883.	24th October...	.....	Berth No. 1, on Hunter's Island, as shewn on a plan of the survey thereof by D.L.S. McAree, a copy of which accompanies the copies of file 8537 herewith.	License expired on 31st December, 1884, and has not been renewed.
Alex. McIvor, Robinson, Compton Co., Que.	11th August, 1883.	24th October...	.....	Berth No. 2, on Hunter's Island, as shewn on plan above referred to.	Assignee of F. Arnoldi, in whose favor O.C. was passed. License expired 31st December, 1884, and has not been renewed.
H. Quetton St. George, Toronto, Ont.	11th August, 1883.	24th October...	.....	Berth No. 3, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
F. C. Campbell, Toronto, Ont...	11th August, 1883.	24th October...	.....	Berth No. 4, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
C. C. Small, Toronto, Ont	11th August, 1883.	24th October...	.....	Berth No. 5, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
H. O'Brien, Toronto, Ont.....	11th August, 1883.	24th October...	.....	Berth No. 6, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
C. J. Campbell, Toronto, Ont...	11th August, 1883.	24th October...	.....	Berth No. 7, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.

(Enclosure No. 14.)—Continued.

SCHEDULE showing the names of those persons in whose favour yearly licenses were issued by the Dominion Government to cut timber in that part of the country known as the "Disputed Territory."

Name and Address.	Date of O. C.	Date of License.		Description.	Remarks.
		1884.	1885.		
Thos. Shortiss, Toronto, Ont	11th August, 1883.	24th October...	....	Berth No. 9, on Hunter's Island. as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
C. J. Campbell & Thos. Shortiss (in trust for the personal representatives of John Ginty, deceased.)	11th August, 1883.	24th October...	.....	Berth No. 10, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
J. S. Aikins, Toronto, Ont.....	11th August, 1883.	24th October...	....	Berth No. 11, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
David Blain, Toronto, Ont.....	11th August, 1883.	24th October...	....	Berth No. 12, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
John MacDonald, Toronto, Ont.	11th August, 1883.	24th October...	.....	Berth No. 13, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
Hugh MacDonald, Toronto, Ont.	11th August, 1883.	24th October...	....	Berth No. 14, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
W. B. Scarth, Toronto, Ont.	11th August, 1883.	24th October...	.....	Berth No. 15, on Hunter's Island, as shewn on plan above referred to.	License expired 31st December, 1884, and has not been renewed.
Thos. Shortiss, Toronto, Ont	11th August, 1883.	24th October...	....	Berths Nos. 16 and 17, on Hunter's Island, as shewn on plan above referred to.	Assignee of Messrs. R. Longtino & E. Lecourt, in whose favour O. C. issued ; licenses expired 31st December, 1884, and has not been renewed.
Keewatin Lumbering & Manufacturing Co. (limited), Rat Portage.	27th October, 1883.	24th October...	10th April	Timber Berth No. 335, being Tp. 1 south in Range 26, and the western 2¼ miles of Tp. 1 south in Range 27, all east of the Principal Meridian, south-east of "Lake of the Woods," as shewn on plan of survey thereof attached to copy of File No. 6140, T. & M.	Assignees of Messrs. Smith & Muir, of Hamilton, Ont., in whose favour O. C. was passed. License for 1885 expired on the 31st December of that year and has not been renewed.

Henry Bulmer, jr., Montreal, Q.	5th February, 1884.	4th September .	20th June....	Timber Berth No. 362, on the south shore of Sabaskong Bay, an arm of "Lake of the Woods," as shewn on plan of survey thereof attached to copy of File No. 3115, T. & M.	License for 1885 expired on the 31st December of that year and has not been renewed.
H. H. Bailey, Cookshire, Q	29th November	22nd November	28th April.....	Timber Berth No. 342, on the southern shore of Sabaskong Bay, an arm of "Lake of the Woods," as shewn on plan of survey thereof attached to copy of File No. 2350, T. & M.	License for 1885 expired on the 31st December of that year and has not been renewed.
Geo. T. Hartt, Montreal, Que ...	21st December, 1883.	....	30th March....	Timber Berth No. 351, on the shores of Pipestone and Crow Lakes, as shewn on plan of survey thereof attached to copy of File No. 8508, T. & M.	License expired on 31st December, 1885, and has not been renewed.
Henry Bulmer, jr., Montreal, Que.	1st December, 1883.	.....	23rd June....	Timber Berth No. 343, as shewn on plan of survey thereof attached to copy of File No. 3115, T. & M.	License expired on 31st December, 1885, and has not been renewed.
A. C. Williamson, Shawville, Que.	5th February, 1884.	....	22nd June	Timber Berth No. 367, as shewn on plan of survey thereof attached to copy of File No. 8359, T. & M.	License expired on 31st December, 1885, and has not been renewed.

[35. Memorandum by the Attorney-General of Ontario.]

Toronto, 28th May, 1887.

The undersigned has had under consideration the despatch of the Secretary of State, dated 6th April, 1887, respecting the lands in the territory to which the Dominion Government have for so many years been resisting the rights of this Province. This despatch recognizes the "inconvenience and loss arising to settlers, and to others engaged in the developing of the great mining interests of that territory, from the uncertainty under which they are now labouring." We have been pressing that subject upon the attention of the Dominion Government for the last nine years, and without any practical effect. The inconvenience and loss referred to have arisen wholly from the illegal claims made by the Dominion; first, the claim that our Province did not include this territory; and, then, the claim that though within our Province the lands, timber and mines, do not belong to the Province, but belong to the Dominion. The first of these contentions was negatived by Arbitrators in 1878, and by Her Majesty in Council in 1884. The second has since been negatived by the Chancellor of the Province, and by the unanimous judgment of the Court of Appeal; but the Dominion Government have declined to acquiesce in these judgments, and they continue the litigation against the Province at great expense. The uncertainty and all its evils are thus the exclusive work of the Dominion authorities, and are the result of, not only the unjust contentions of the Dominion Government, but also of their refusal for many years to make interim arrangements with this Government for dealing with the lands pending the litigation, and of their at the same time assuming, in disregard of the legal and equitable rights of this Province, to issue licenses and otherwise deal with the lands in the territory.

The despatch under consideration makes no reference to the communication said before the Dominion Elections to have been addressed to this Government in November last, proposing an arrangement with reference to licenses to cut timber in the territory, but the subject is mentioned in another despatch bearing date, 13th May, and received on the 19th instant. This despatch is to be referred to later on.

It will be remembered that, shortly before the Dominion Elections, there was published in the local newspapers of Algoma a letter from the Deputy Minister of the Interior, Mr. Burgess, to Mr. Dawson, M.P., dated 10th December last, referring to a petition which had been received from the inhabitants of Rat Portage, and stating in reply as follows: "A communication has been lately sent to the Lieutenant-Governor of the Province of Ontario, stating that the Government of Canada will be glad to come to some arrangement with the Government of Ontario, under which parties to whom licenses to cut timber in the disputed territory have been issued by this department previous to the decision of the Judicial Committee of the Privy Council, and who had expended a large sum of money in erecting mills, etc., might, pending a settlement of the question as to the land titles in the territory affected by the decision of the Judicial Committee of the Privy Council, be permitted to continue to cut and manufacture timber on the berths acquired by them before the said decision was rendered. If the Ontario Government agree to this arrangement, they will be asked to agree to an arrangement of a somewhat similar nature in regard to the title in fee simple." The attention of the undersigned having been called to this letter by Mr. Conmee, M.P.P. for Algoma West, the undersigned, on the 26th January, 1887, addressed a letter to that gentleman, which Mr. Conmee afterwards published, and in which the undersigned stated that the Deputy Minister must have written his letter under a mistake; for that no communication such as he mentioned had been received here; that a communication had been received in November last with reference to the case of Mr. Bulmer and his Company, and that case only, and making no proposal or suggestion with reference to other licensees.

A despatch on the same subject was shortly afterwards (9th February) addressed by His Honour to the Secretary of State, in which His Honour stated as follows,—"My Government have had their attention called to a letter in the Algoma newspapers, addressed by Mr. Burgess, as Deputy Minister of the Interior, to S. J. Dawson, Esq., M.P., setting forth that a communication had been lately sent to me, stating that the

Government of Canada would be glad to come to some arrangement with the Government of this Province with respect to licenses to cut timber in the recently disputed territory, pending a settlement of the question as to the land titles in the territory. I have to state that, so far as I recollect or am aware, no such communication has been received by me, unless the reference is to your despatch of the 8th November, which mentions the case of Mr. Bulmer and his Company, and no others." With respect to what was said in the Deputy Minister's letter as to granting the title in fee simple, the despatch stated that this Government would be glad to consider, without delay, any proposal which the Dominion Government might make upon the subject, whether that Government should or should not propose any arrangement as to licenses to cut timber; and the Dominion Government were reminded (amongst other things) that, though information had been repeatedly asked for, that Government had not yet communicated to us the particulars of their dealings with the lands. The despatch stated that this Government would be glad to receive the information now, and to consider with prompitude any interim arrangement which the Dominion Government might suggest.

This despatch was acknowledged on the 11th February; and, in the letter of acknowledgment to His Honour was summarized as "having reference to a letter in the Algoma newspapers, addressed by Mr. Burgess as Deputy Minister of the Interior, setting forth that a communication had been lately sent to you, stating that the Government of Canada would be glad to come to some arrangement with the Government of Ontario with respect to licenses to cut timber in the recently disputed territory pending a settlement of the question as to the land titles in the territory;" and it was stated that "the matter will receive consideration."

Three days afterwards, namely, on the 14th February, the Deputy Minister again telegraphed Mr. Dawson on the subject, asserting, or seeming to assert, the accuracy of his letter of the 10th December; and the letter of the undersigned to Mr. Conmee was answered by the publication of this telegram, and of a note from Mr. Dawson. The telegram of the Deputy Minister was as follows:—"The communication to the Lieutenant Governor of Ontario, referred to in my letter to you of the 10th December last, was sent to him by the Secretary of State on November 8th, and acknowledged on the 10th. It stated that the Dominion Government would be glad to come to some arrangement with the Ontario Government under which the parties referred to in that letter, to whom licenses have been granted to cut timber, pending a settlement of the question as to the Indian title may be permitted to continue to cut and manufacture timber on the berths acquired by them." Mr. Dawson's note made the following statement with reference to this telegram:—"It shows that Mr. Mowat must have been mistaken in saying (as appears by his published letter to Mr. Conmee) that no communication such as Mr. Burgess mentioned had been received by the Ontario Government."

No further communication was made to this Government on the subject until the despatch above mentioned of the 13th May, but that despatch admits that no communication had been made to this Government except as to the case of Bulmer & Co.; and therefore that the letter of the Deputy Minister, so far as it intimated, or was understood to intimate, that there had been a communication respecting other licensees, conveyed that meaning erroneously. Accompanying the despatch of the 13th May, are various documents which are said to give the information desired as to the timber licenses granted by the Dominion Government after the decision of the Privy Council in 1884, but no others. The undersigned has not yet completed the consideration of these documents, and he therefore in the present memorandum confines his attention to the case of settlers, and claimants other than licensees to cut timber.

The Dominion despatch under consideration suggests negotiating with the limit holders in whose limits settlers and holders of mining rights have claims; but no information is given with reference to the dealings of the Dominion Government with those settlers or claimants of mining rights, or to the Dominion Grants and Orders in Council in reference thereto. The names are set forth of several companies said to possess mining rights, but the despatch contains no information as to these so-called rights. They were not obtained from this Government; and it is presumed, therefore, they were some that

the Dominion Government had illegally assumed to give, and as to which information, though repeatedly asked for, continues to be withheld.

The despatch proposes further a Joint Commission by the two Governments, to settle boundaries of lots at Rat Portage, and questions as to mining locations outside of the timber limits; and to grant titles to the holders of such locations, and to settlers at Rat Portage and on Rainy River.

This proposal of a Joint Commission is not now made for the first time. It was made five years ago by the Dominion Government, and the negotiation was long since dropped by that Government without explanation, and notwithstanding repeated efforts on our part for continuing the negotiation and bringing it to a satisfactory conclusion. The proposal was made at that time in consequence of the Dominion House of Commons having on the 4th April, 1882, passed a resolution suggesting a reference of the question of title, and recommending that, pending the reference, the administration of the land should be entrusted to a Joint Commission appointed by the two Governments. The Dominion Government took no action on this resolution for five months, but in the following September notified us that they were prepared and anxious to carry out the resolution.

On the 11th December, 1882, the views of the Ontario Government on the subject were communicated to the Dominion Government, and it was observed (amongst other things) that the resolution of the House of Commons did not suggest how the Land Commission so proposed was to be constituted, of how many members it was to consist, how many of the members were to be appointed by each party, what the tenure of the office was to be, or what were to be the powers of the Commissioners; and that it was obvious the usefulness of the Commission, or the propriety of acceding to the proposal, depended upon these matters. The receipt of this despatch was acknowledged, but the Dominion Government took no further notice of the matter. They did not attempt to controvert the observations made in the despatch, nor did they make any suggestion for supplying any of the defects pointed out.

The matter of a Joint Commission was afterwards pressed on the attention of the Dominion Government by a despatch of His Honour, dated the 31st January, 1884, and the following specific proposal was then made by this Government:—(1) That the Commission should consist of two persons, one to be appointed by each Government; (2) that the Commissioners should have the powers which the Public Lands Act and the Free Grants and Homesteads Act of Ontario confer on the Lieutenant-Governor in Council and on the Commissioner of Crown Lands respectively (and if the Dominion Government should prefer any variations, it was requested that these should be communicated without further delay for the consideration of this Government); and (3) that proper provision should be made for filling vacancies and paying expenses, as to which the Dominion Government was asked to make suggestions for consideration.

To this proposal the Dominion Government replied by a despatch, dated 18th March, 1884, desiring several variations; and on the 29th of April the despatch was answered to the effect, that it seemed to this Government the matter might be more usefully discussed and disposed of by conference than by further correspondence, and that the Commissioner of Crown Lands and some other member of the Executive Council would for this purpose meet the Minister of the Interior (to whose department the subject belonged) and any other Dominion Minister on any day which the Dominion Ministers might name. It was observed that "an early date is of course important."

The receipt of this despatch was acknowledged, but no further answer to it was ever made.

Thus, in the negotiation for a Joint Commission, there had been a break of nearly three years when the proposal for such a Commission is again made. In renewing the proposal nothing is suggested to advance the negotiation by one step beyond the point it had reached on the 31st January, 1884; our despatch of that date is unanswered; no conference is provided for; and no substitutionary or supplementary provisions are suggested which might render a conference necessary. Under these circumstances, the proposal now made does not appear a very practical thing. It is in fact rather a step backwards; for the proposal now is, that "a joint title" should be issued to the settlers in the Rainy River District from the two Governments, to be afterwards "confirmed" by one

or other when a final decision is obtained respecting the so-called Indian title. Thus the "joint title" contemplated does not appear to be actual Grants by the two Governments, for in that case the title would need no subsequent confirmation by either; and the undersigned is of opinion that nothing short of actual Grants would do justice to the settlers.

Since the Dominion Government withdrew from the negotiation formerly instituted, Her Majesty in Council has decided the question theretofore in dispute as to the boundaries of the territory for which the Joint Commission is proposed; the High Court of Justice and the Court of Appeal have decided the question of ownership in our favour, and an immediate judgment of the Supreme Court to the same effect is expected, the case having been argued before that Court in November last. The matter is therefore not in the same position as when the former proposal for a Joint Commission was made by the Dominion Government; and this Government, before receiving the recent despatches, had determined to recommend to His Honour the Lieutenant-Governor that, without waiting either for the result of an appeal by the Dominion Government to Her Majesty's Privy Council from the expected judgment of the Supreme Court, or for any action by the Dominion Government, Grants should be made under the Great Seal of the Province to all settlers who may desire to receive Provincial Grants, notwithstanding the continued claim of the Dominion. It would be satisfactory if this course should now be agreed to by the Dominion Government, subject as between the two Governments to any conditions which, in view of the supposed or assumed possibility of the decisions of the Courts here being reversed, should seem reasonable. But what the Dominion Government propose is, to ignore for the present purpose all the decisions which have been given in favour of the Province, and to treat the subject of interim arrangements as if there had been no such decisions, or as if the decisions had so far been in favour of the Dominion instead of the Province. No new proposal adapted to the circumstances is made to us, and we are asked (in effect) to resume the old negotiation which the Dominion Government abandoned years ago, and to resume that negotiation at the point which it had reached five years since, and without having His Honour's subsequent despatches on the subject either answered or (so far as appears) even considered, and without the information which we have often and urgently asked for, and our right to which is not controverted or controvertible.

On the other hand, if there should be no interim agreement, and if there should be an appeal to the Privy Council from the expected judgment of the Supreme Court, the appeal need not take more than a few months, if the Dominion Government make no unnecessary delays; the materials for a final decision have been collected and printed, and have been repeatedly considered by counsel; and the other proceedings are simple and will require but a few weeks to perfect them. It is impossible not to see that a Commission such as is proposed, however well intended it may be supposed to be, would create motives not now existing for delaying indefinitely appeal proceedings of the success of which there cannot, under the circumstances, be much hope; and the question is, whether it would be right or prudent to abandon the policy of now giving at once Provincial Grants to those who may desire them, and, in lieu, to resume the negotiation for placing the exclusive power in the hands of a Joint Commission. The practical effect of the Commission would be, to bind the Province, as long as the Commission exists, to give no Patent to any settler or other claimant except such as the Dominion Commissioners and Dominion Government may choose, and at such time as they may choose.

Apart from the discouraging result of the former proposal for a Joint Commission, it cannot be forgotten that the general policy of the Dominion Government with respect to the territory in question has not been such as to favour any expectation that, if we should now deprive ourselves of the power of dealing with the lands, the proceedings of the Dominion Government and their Commissioners would be prompt. The proposal has to be considered in the light of all that has taken place.

A delay of more than three years followed the Award before the Dominion Government communicated to this Government their intention to reject the Arbitrators' decision. This Government had in numerous communications during the three years vainly complained of the delay in carrying out the Award; and until 1882 our communications obtained no attention whatever, except a formal acknowledgment of having been received

The first communication of any greater significance was a despatch of the 27th January, 1882; our answer, dated 18th February, 1882, received no attention; and no other communication on the subject was made to this Government until the 2nd September, 1882, when the proposal of a Joint Commission was first made. The despatch of that date and its fruitlessness have already been mentioned.

So, also, has it been with our requests for information to which the Province was entitled. Thus the Award was made on the 3rd August, 1878. On the 31st December, 1878, this Government expressed their desire "to receive as soon as possible the maps, field-notes, etc., etc., relative to so much of the territory assigned to Ontario as had been surveyed under the authority of the Dominion." These have not been furnished up to this day, though upwards of eight years have since elapsed; and in no communication from the Dominion Government has any reason been given for not furnishing them.

On the 23rd September, 1879, the request was repeated—that the Dominion Government should "forward to this Government the maps, field-notes, etc., etc., relative to so much of the territory assigned to Ontario as had been surveyed under the authority of the Dominion;" but with the same result.

On the 1st February, 1881, the undersigned, in a communication to the Minister of Justice, proposed that the Dominion Government should concur in our dealing with the lands in the disputed territory, subject to our accounting therefor in case our right to the territory should not be maintained. It was pointed out that, though the Parliament of Canada had not yet recognized the Award, the Award certainly gave to the Province, meantime, such a *prima facie* interest as made it most reasonable that we should have the necessary means of giving titles to the settlers within the territory, so long as (what the Dominion Government deemed) the possible rights of the Dominion were duly protected in the manner proposed. No answer was made to this proposal, no objection to it was suggested, and no counter proposal was submitted. The Dominion Government simply said nothing, and did nothing, to enable titles to be given.

On the 31st December, 1881, this Government again addressed a despatch on the subject to the Dominion Government, and renewed the proposal already made as to the lands and timber, reminding the Dominion Government of the former communication on that and other subjects: and that none of them had since been made the subject of any communication to this Government, and that no other arrangement had been proposed. The despatch further suggested that, if the Dominion Government were not willing to agree to the arrangements which we had proposed, this Government would be glad to be informed what the best terms were to which the Dominion Government would agree. This despatch renewed the request formerly made for information as to transactions of the Dominion Government with respect to the disputed territory since the date of the Award; and it was stated that what this Government desired to have was, "information of all transactions with respect to the timber and lands respectively, including copies of all grants, licenses, permits, regulations, instructions, letters, documents, and papers of every kind relating to the same."

In the reply, 27th January, 1882, it was said that "information regarding all permits, licenses and other transactions would be readily furnished to the Government of Ontario at any time." But, though this was said, no such information was furnished to this Government, nor, with the exception which has been mentioned, has it been furnished since, and five years have now elapsed.

In a despatch of His Honour, dated the 18th of February, 1882, it was observed that "no provisional arrangements can be adequate which do not, amongst other things, include just arrangements rsgarding the sale of lands and the preservation of timber;" and regret was expressed that the Dominion Government gave no information, "and do not apparently offer any, with respect to transactions affecting that important part of the disputed territory which lies west of the Provisional line, though such information has been repeatedly requested on behalf of the Ontario Government." And it was once more respectfully insisted that "whether the title of Ontario to the territory is disputed or admitted, and whether the Provisional Agreement of 1874 is in force or at an end, the people of Ontario are entitled to full information respecting these transactions, including (as the despatch of 31st December had mentioned) copies of all grants, licenses,

permits, regulations, instructions, letters, documents and papers of every kind relating to the same."

In considering the present proposal, it is material to remember further that, by a despatch dated 18th March, 1884, the Dominion Government agreed that the question of the northern boundary of this Province, in which Manitoba was not interested, should be referred to Her Majesty's Privy Council for decision at the same time as the western boundary, which that Province was interested in and had agreed to refer; but, afterwards, the Dominion Government could not be induced to carry out this arrangement, nor to give any reason or explanation why it was not carried out; and the greater part of the northern boundary is in consequence still a matter of dispute. The territory to which the despatch under consideration refers does not extend to this part.

Again, in answer to one of the questions submitted to Her Majesty's Privy Council with the consent of the Dominion, their Lordships of the Judicial Committee reported to Her Majesty their opinion, that it was "desirable and most expedient that an Imperial Act of Parliament should be passed to make their decision binding and effectual;" and their report was confirmed by Her Majesty in Council. On the 27th August, 1884, a despatch was sent from the Colonial Office to His Excellency the Governor-General, requesting to be informed whether that Government desired that the Imperial legislation so recommended should be promoted by Her Majesty's Government, and suggesting that in that case a draft Bill should be sent for consideration. This Government has urgently requested the Dominion Government to take the necessary steps, accordingly, for obtaining the Imperial legislation required. To facilitate and expedite this action, as long ago as November, 1884, a draft bill was sent by His Honour to the Dominion Government for consideration The despatches of His Honour on the subject were acknowledged, but nothing has been done by the Dominion Government to this day towards settling the form of the Act, or for obtaining the Imperial legislation needed.

It was said in Parliament, by the First Minister, in the first session after the decision of Her Majesty in Council, that "the Canadian Government in the meantime desire to open negotiations, or rather to have communication, with the Province of Manitoba, the Province of Ontario, and the Province of Quebec, for the purpose of settling forever, not only the boundary between Manitoba and Ontario, which is practically settled, but the northern boundary of Ontario, and the northern boundary of Quebec; and, after communicating with these several Governments, to get from the Imperial Parliament at its next session some legislation settling these three questions forever." This statement is taken from the official reports of the Debates and Proceedings of the House of Commons of Canada. But for two years or more nothing has been heard of the negotiations which were contemplated; the Imperial legislation was not obtained, or applied for, at the next Session; nor has it been obtained or applied for since.

So, also, in considering the prudence of acceding to the proposal under consideration, it cannot be forgotten that after the Award had been made, the Dominion Government continued to deal with the lands awarded (and since adjudged) to belong to this Province, issuing licenses and permits for cutting the timber, and granting mining rights; all this being done without communication with this Government, and notwithstanding our protests. These illegal dealings were not even confined to the lands west of the provisional line of 1874, as stipulated by the provisional agreement, and were not wholly discontinued even after the decision of the Privy Council.

It has to be remembered, also, that, while the negotiations were in progress for submitting the question of boundary to Her Majesty's Privy Council, this Government proposed and urged that the claim of the Dominion to the ownership of Crown Lands and timber in the then disputed territory should also be referred to the Privy Council; but the Dominion Government rejected the proposal, and deliberately preferred the delay of the question, going first before the Courts here, and to the Privy Council by way of appeal only. No just or even intelligible reason was given for the preference. Except for this refusal the decision of the Privy Council on the question of ownership might have been got in the same term as the decision on the question of boundary, and the present uncertainty and its evils would have disappeared three years ago. For the correspondence on the subject, the undersigned refers to his report of the 23rd January,

1884, approved and adopted by His Honour in Council and communicated to the Dominion Government; the despatch of the Secretary of State, dated 18th March; and the despatch of His Honour the Lieutenant-Governor, dated 29th April, of the same year; all of which appear in the Sessional papers of the Province.

Nor, in dealing with the proposal now made, can we put out of consideration the fact, that the claim of the Dominion Government to the Crown Lands in question is unjust towards this Province, apart from its declared illegality. All the other Provinces of the Dominion have Crown Lands in precisely the same position as regards the so-called Indian title, and up to this day these Provinces are permitted to treat such lands as beyond doubt or question the lands of the Province in which they are situate; and the Dominion Government make no claim to them; the supposed Indian title is used against this Province only.

Nor can it be forgotten that, before the Indian title was thought of as affording a possible chance of depriving the Province of these lands, the Dominion Premier in a debate in Parliament on the Manitoba Bill of 1881, announced his purpose to "compel" this Government to "come to terms," and his purpose to induce such a condition of the territory that "they must do so." The Province has hitherto refused to be compelled. For us to resume, under the altered circumstances and at this late date, the negotiation for a Joint Commission would be helping the Dominion policy more effectually than the attempted compulsion. It would be putting our heads into the lion's mouth.

Then again, as early as 25th November, 1871, the Secretary of State had recommended that until the boundary question should be settled neither Government should issue licenses or patents for land in the territory in dispute. A provisional line was afterwards agreed to with authority to each Government meanwhile to deal with the lands, the Dominion on the west and the Ontario on the east side of this line. When the award was made this Government considered that this agreement was at an end. The Award was disputed by the Dominion Government, but it certainly made the case stronger than before, why, without the concurrence of this Province, there should, pending the dispute, be no dealings by the Dominion Government with the lands claimed by and awarded to the Province. In consequence of the question of right being still disputed on the part of the Dominion Government, this Government, though the Award was in our favour, thought it a duty to refrain from dealings with the lands, and so informed the Dominion Government; but, on the other hand, the Dominion Government, in spite of the Award and the protests of this Province, dealt with the Lands after the Award as if they were the property of the Dominion. Nor did that Government confine their action to the western side of the Provisional line, as the Provisional Agreement had provided for; but, having on the 29th July, 1884, notified us of their concurrence in the abrogation of the Provisional line, they thenceforward not only continued to exercise all the rights which the provisonal agreement had given them, but also undertook to authorize by license the cutting of our timber east of the Provisional line, and even south of the Height of Land.

How long it would now take to get the preliminaries of a Joint Commission settled, if they could be settled; or how long to get the Joint Commissioners at work afterwards, if they could be got at work; or how long for Commissioners to dispose of claims, if they should dispose of them; or how long it would take for the Dominion Government to concur in carrying out the decisions arrived at, if there should be such decisions—it is impossible to foresee. But, judging from the past, it is manifest that the delay would be far greater than the time necessary for obtaining the decision of the Privy Council on the question which the Dominion Government are now litigating; while the practical effect of the Commission would be to prevent, meanwhile, a single patent from being issued unless the Dominion Government and Dominion Commissioners chose, and then only to such as they chose. Now that our western boundary has the support of the Order of Her Majesty in Council, and our ownership the judgment in our favour of the High Court and the Court of Appeal, and in view of the policy of delay which, in the important particulars mentioned in this memorandum the Dominion Government have persistently pursued for nearly nine years, and in view also of the other considerations which the undersigned has stated, he is of opinion that it is not prudent, and would be in opposition to the interests of settlers, for us to resume now the negotiation for a Joint

Commission. The undersigned is of opinion that, instead of that course, Grants should be made under the Great Seal of the Province to all settlers who are equitably entitled to Grants, and who shall prefer to take Provisional patents at once without the concurrence of the Dominion Government rather than wait for the further decision of Her Majesty's Privy Council. If, meanwhile, any fair proposal should be made by the Dominion Government which may appear to be in the interest of settlers, and not such as to put the Province into the hands of the Dominion Government, the undersigned would recommend that the proposal receive every favourable consideration.

O. MOWAT.

[36. Order in Council approved by His Honour the Lieutenant-Governor the 30th day of May, A.D., 1887.]

The Committee of Council having had under consideration a memorandum of the Honourable the Attorney-General, dated the 28th day of May, with reference to the despatch of the Honourable the Secretary of State, dated the 8th day of April last, respectfully advise that your Honour do address a reply to the Secretary of State to the effect of the annexed draft.

Certified,

(Signed) J. LONSDALE CAPREOL,
Asst. Clerk Executive Council,
Ontario.

To the Honourable
The Provincial Secretary.

[37. The Lieutenant-Governor to the Secretary of State.]

$\left\{\frac{557}{1887}\right\}$

Government House,
Toronto, 30th May, 1887.

Sir,—With reference to your despatch of the 8th of April proposing a Joint Commission to be appointed by the two Governments, to decide on the patents to be issued to settlers and others for the lands in the westerly part of the Province, my Government desire to remind you that this proposal was made by your Government five years ago; that the negotiation was dropped without explanation, and notwithstanding urgent despatches which I had the honour of addressing to your Government. The despatch communicating the proposal was dated September, 1882. On the 11th December following, the views of my Government on the subject were communicated, and certain defects in the proposal were pointed out. No notice of this having been taken, the matter of a Joint Commission was subsequently pressed on the attention of your Government, by a despatch dated 31st January, 1884. To this despatch your Government replied on the 18th March, 1884, desiring several variations. On the 29th April, I communicated to your Government a suggestion, that the matters referred to might be more usefully discussed and disposed of by conference than by further correspondence; and it was stated that the Commissioner of Crown Lands and some other member of the Executive Council would for this purpose meet the Minister of the Interior and any other Dominion Minister, on any day which the Dominion Ministers might name. This suggestion was neither objected to nor carried out by the Dominion Government; and now that you again propose a Joint Commission, it is observed that you say nothing of the suggested conference, or of any

substitutionary or supplemental provisions which might render a conference necessary. If the Joint Commission had then been issued and had been acted upon, my Government assume that the uncertainty and loss to which your despatch alludes might have disappeared years ago; and they do not perceive that your present proposal advances the matter beyond the point it had reached in 1882. They infer that your Government have not yet considered the suggestions then made, and are not prepared either to accept them, or to make any other suggestions for settling the necessary details mentioned in former despatches. Under these circumstances, my Government do not look upon your renewal of the old proposal as hopeful or encouraging as a means of putting the settlers and others in early possession of their Patents.

I may notice that the position of the controversy between the two Governments has entirely changed since the former negotiation began or ended. Nothing had then been judicially decided in regard to the territory in question; nor had the proceedings necessary for procuring a decision been commenced. Her Majesty in Council has since decided that the territory is within the Province of Ontario; the High Court of Justice and Court of Appeal have decided that the ownership of the lands is also in this Province; and a like decision of the Supreme Court within a few weeks, if not days, is expected. My Government consider that on the strength of these decisions they are now justified in issuing without further delay Provincial Patents to such settlers as may desire them; and it has been ascertained that most if not all the settlers wish this course to be taken.

Notwithstanding the decisions heretofore given in favour of the Province, some uncertainty may attach to these Patents as long as the question of ownership is in litigation, and it would be of service for the developing of the territory, and in the interest of settlers, that this uncertainty should be removed. This may be accomplished in three ways: (1) By your Government abandoning their claim in consequence of the adverse judicial decisions already had; or (2) by procuring at the earliest possible day the decision of the Privy Council, the only remaining authority before which the question can now be brought; and my Government observe that with due diligence it would be now quite practicable to obtain this final decision in a few months. (3) To prevent uncertainty and loss to settlers and others meanwhile, my Government respectfully submit that in view of the judicial decisions which have been pronounced in favour of the Province, it would be just and reasonable for your Government to announce an intention of recognizing in any event the Provincial patents which may be issued during this interval, subject to any fair or necessary condition as between the two Governments.

The objections which my Government make to a Joint Commission at this late period are chiefly these:—

(1) That the Dominion Government did not proceed with the negotiation after proposing it at a period when some such arrangement would have been of service to the settlers and others interested in the territory, and when a considerable lapse of time had to be contemplated before the question of right could be decided. A Joint Commission now would be of comparatively little, if any, value, and might do more harm than good.

(2) That there is great reason to fear that to agree to a Joint Commission now would not afford any security for early Patents to those entitled to them.

(3) That the Commission would remove all motive on the part of the Dominion to expedite the final termination of the litigation; as until then not a patent could be issued unless your Government and Commissioners chose; while the power of your Government in this respect would be at an end as soon as an adverse decision by the Privy Council is pronounced; and there cannot be any great hope of the decision being otherwise than adverse.

(4) That great delays have repeatedly taken place on the part of your Government in connection with the controversy, and the Province has no guarantee, and can have none, that like delays will not take place, if by agreement the Province should be deprived of its present power of dealing with the lands until another decision of the Privy Council is obtained. Besides the illustration of this danger which is afforded by the negotiation already had for a Joint Commission, my Government refer me to other facts, such as

(amongst others) the agreement of your Government in 1882 to refer the question of our Northerly boundary to the Privy Council, and which your Government did not carry out, the result being that the greater part of our Northerly boundary is still in dispute; the refusal of your Government in 1884 to avoid delay from the question of ownership by referring the question to the Privy Council; and the time which has been lost on the part of the Dominion Government, in obtaining the Imperial legislation which their Lordships of the Judicial Committee recommended for the confirmation of their decision.

I have, etc.,

(Signed) J. B. ROBINSON,
Lieutenant-Governor of Ontario.

The Honourable
THE SECRETARY OF STATE,
Ottawa, Ont.

[38. THE SECRETARY OF STATE TO THE LIEUTENANT-GOVERNOR.]

{3513 on 4909}

DEPARTMENT OF THE SECRETAY OF STATE,
OTTAWA, 3rd June, 1887.

SIR,—I have the honour to acknowledge the receipt of your despatch of the 30th ult., having reference to the subject of my letter, of the 8th April last, in relation to a joint commission being appointed to decide on the patents to be issued to settlers and others for lands in the so-called disputed territory.

I have, etc.,

(Signed.) G. POWELL,
Under Secretary of State.

His Honour,
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto, Ont.

[39. THE LIEUTENANT-GOVERNOR TO THE SECRETARY OF STATE.]

GOVERNMENT HOUSE,
TORONTO, July 11th, 1887.

SIR,—My Government wish the attention of the Dominion Government to be called to the fact that no step has yet been taken by that Government for procuring the Imperial legislation required to confirm the decision of Her Majesty in Council with respect to the boundaries of the Province. My Government desire to express most respectfully their hope that the delay may not be continued. As the matter is not one with respect to which there can be any controversy in Parliament, it is apprehended that there would be no difficulty in procuring such an Act to be passed before the close of the present Session of the Imperial Parliament.

I have the honour to remind you that the decision of their Lordships of the Judicial Committee of Her Majesty's Privy Council was announced on the 22nd July, 1884, and was confirmed by Her Majesty in Council on the 11th August following; that one of the questions which, with the concurrence of the Dominion Government, were submitted to their Lordships of the Judicial Committee was, "Whether, in case legislation is needed to

make the decision on this case binding or effectual, Acts passed by the Parliament of Canada and the Provincial Legislatures of Ontario and Manitoba in connection with the Imperial Act 34 and 35 Vic. Cap. 28, or otherwise," would "be sufficient, or whether a new Imperial Act for the purpose" would "be necessary;" and that "with reference to this question their Lordships, in the third section of their report, stated "that, without expressing an opinion as to the sufficiency or otherwise of concurrent legislation of the Provinces of Ontario and Manitoba and of the Dominion of Canada (if such legislation should take place), their Lordships think it desirable and most expedient that an Imperial Act of Parliament should be passed to make this decision binding and effectual."

I have further to remind you that on the 27th August, 1884, copies of Her Majesty's Order in Council were transmitted by the Right Honourable the Colonial Secretary to be laid before the Dominion Government; that, by the despatch accompanying them, it was observed that "one of these copies is an authentic document under seal, and is intended to be kept among the archives of the Dominion;" and that the despatch proceeded as follows:—"With regard to the third section of the report of the Judicial Committee, I shall be glad to be informed whether it is desired that the Imperial legislation therein proposed shall be promoted by Her Majesty's Government, and in that case a draft of the Bill which is thought proper should be transmitted to me for the consideration of Her Majesty's Government." I am informed that no copy of this despatch, and no intimation of its having been received, was communicated by the Dominion Government to the then Lieutenant-Governor of this Province or to his Government; but the Solicitors of the Province in London procured from the Colonial Secretary a copy on the 11th November, and transmitted the same for the information of the Provincial Government here. I am informed that, to expedite the matter, the Government of the Province thereupon procured a draft bill to be prepared for the purposes as suggested in the Imperial despatch, and on the 22nd November, 1884, my predecessor forwarded the same for the consideration of your Government.

I am informed that during the Session of the Federal Parliament in 1884, questions were put to the Government as to the course they intended to take in the matter; that an answer was given within a few days of the close of the Session; and that the statement then made to the House of Commons by the Premier was, that "with respect to the boundary between Ontario and Manitoba there can be no difficulty. The Government are quite prepared that an Act should pass for that purpose;" that "there was no chance of there being any Imperial legislation until the next meeting of the Imperial Parliament;" and that "the Canadian Government, in the meantime, desire to open negotiations, or rather to communicate, with the Province of Manitoba, the Province of Ontario, and the Province of Quebec, for the purpose of settling for ever not only the boundary between Manitoba and Ontario, which is practically settled, but the northern boundary of Ontario and the northern boundary of Quebec, and, after communicating with these several Governments, to get from the Imperial Parliament at its next Session some legislation settling these three questions for ever."

In reference to the reason thus given for delay, my Government observe that the Order of Her Majesty in Council has settled every possible question of boundary between Manitoba and Ontario; and, as an additional reason against delay, it is further observed that the territory which was in dispute with Manitoba, and which is covered by the decision as to our western boundary, consists of about 39,000 square miles, and includes the only parts of the disputed territory in which there has hitherto been any settlement worth speaking of, and the only disputed territory in which there is any expectation that much settlement will very soon take place.

As to the northern boundary of Ontario, or so much of it as is not included in Her Majesty's Order in Council, I am informed that no communication has been made to this Province since the decision, and my Government cannot learn that any negotiation has taken place with the Government of Quebec with respect to the northern boundary of that Province; but my Government respectfully insist that as the question of the northern boundary of Quebec does not affect the boundary of Ontario in any direction, it for that further reason should not delay obtaining the Imperial legislation to which this Province is entitled.

No communication having been made to this Government with respect to the draft bill which my predecessor forwarded in November, 1884, I have had another draft prepared for the consideration of your Government, and it is earnestly requested that this draft, with any other which your Government prefers, may be at once communicated to the Imperial Government for their consideration, as suggested in the Imperial despatch of 27th August, 1884.

In case the draft herewith is not approved, my Government further request that they may be furnished with a copy of any substitute which may be transmitted with this draft to the Colonial Secretary.

My Prime Minister is about to visit London on public business, and while there will, on behalf of this Province, give to the matter mentioned in this despatch any attention which may in any way expedite the legislation needed.

I have, etc.

(Signed.) A. CAMPBELL,
Lieutenant-Governor of Ontario.

The Honourable
THE SECRETARY OF STATE,
Ottawa, Ont.

[40. *Enclosure with above.*]

BILL.

Whereas, certain boundaries of the Province of Ontario and Manitoba were in dispute, and the said two Provinces with the concurrence of the Dominion of Canada agreed to submit the question to Her Majesty in Council for determination ;

And Whereas, Her Majesty, by Her order in Council of 26th July last, was pleased to refer unto the Judicial Committee of the Privy Council, the humble petition in that behalf of the Attorney-General for the Province of Ontario, and the Attorney-General for the Province of Manitoba, as representing the said Provinces respectively ;

And Whereas, the Lords of the Committee, in obedience to Her Majesty's said order of Reference took the matter into consideration, and after hearing Counsel of the Dominion of Canada as well as of the Provinces, reported to Her Majesty their opinion that legislation by the Dominion of Canada as well as by the Province of Ontario was necessary to give binding effect as against the Dominion and the Province to the award, and that as no such legislation had taken place the award was not binding ; that nevertheless their Lordships found so much of the boundary lines laid down by that award as relate to the territory in dispute between the Province of Ontario and the Province of Manitoba to be substantially correct, and in accordance with the conclusion which their Lordships drew from the evidence laid before them ; and that upon the evidence their Lordships found that the true boundary between the western part of the Province of Ontario, and the south-eastern part of the Province of Manitoba to be as in their said report stated ; and further found the Northern boundary of the said Province of Ontario to be in part as in said report is set forth ; and their Lordships further reported that, without expressing an opinion as to the sufficiency or otherwise of concurrent legislation, of the Provinces of Ontario and Manitoba, and of the Dominion of Canada (if such legislation should take place), their Lordships thought it desirable and most expedient that an Imperial Act of Parliament should be passed to make the decision of their Lordships binding and effectual ;

And Whereas, Her Majesty having taken the said report into consideration was pleased by and with the advice of Her Privy Council to approve thereof, and to order that the same should be observed, obeyed and carried into execution ;

And Whereas, the boundaries of the Province of Ontario so far as set forth in the said Report are the boundaries hereinafter set forth, and it is desirable and expedient that the same should be by this Act confirmed and made binding and effectual for all purposes;

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords, spiritual and temporal, and of the Commoners in the present Parliament assembled, and by the authority of the same;

And it is hereby enacted and declared that the true boundaries of the said Province of Ontario are in part as follows: "So much of a line drawn to the Lake of the Woods through the waters drawn eastward of that lake and west of Long Lake, which divide British North America from the territory of the United States, and thence through the Lake of the Woods to the most north-western point of that lake as runs northward from the United States boundary, and from the most north-western point of the Lake of the Woods, a line drawn due north until it strikes the middle line of the course of the river discharging the waters of the lake called Lake Seul, or the Lonely Lake, whether above or below its confluence, with the stream flowing from the Lake of the Woods towards Lake Winnipeg," and "proceeding eastward from the point at which the before mentioned line strikes the middle line of the course of the river last aforesaid along the middle line of the course of the same river (whether called by the name of the English River or as to the part below the confluence by the name of the River Winnipeg), up to Lake Suel or the Lonely Lake, and thence along the middle line of Lake Seul or the Lonely Lake to the head of that lake, and thence by a straight line to the nearest point of the middle line of the waters of Lake St. Joseph, and thence along that middle line until it reaches the foot or outlet of that lake, and thence along the middle line of the (Albany) River by which the waters of Lake St. Joseph discharge themselves until it reaches a line drawn due north from the confluence of the Rivers Mississippi and Ohio."

[41. The Secretary of State to the Lieutenant-Governor.]

{ 4415 / 10189 }

Department of the Secretay of State,
Ottawa, 26th July, 1887.

Sir,—I have the honour to acknowledge the receipt of your despatch of the 11th inst. with reference to procuring Imperial legislation to confirm the decision of Her Majesty in Council respecting the boundaries of the Province of Ontario, and at the same time transmitting for submission to the Imperial Parliament draft of bill to effect such legislation.

I have, etc.

(Signed.) G. POWELL,
Under Secretary of State.

His Honour
The Lieutenant-Governor of Ontario,
Toronto, Ont.

[42. The Lieutenant-Governor to the Secretary of State.]

{ 561 / 1887 }

Toronto, 12th July, 1887.

Sir,—With reference to your despatches on the subject of certain licenses to cut timber in Ontario territory which have been granted by your Government since the decision of the Privy Council in favour of the Province on the 11th August, 1884, my

Government after consideration fail to see that, in the present condition of the litigation, and of the information furnished to them, they can make any proposition to the Government of the Dominion for dealing with such cases.

I have, etc.,

(Signed.) A. CAMPBELL,
Lietenant-Governor of Ontario.

The Honourable
THE SECRETARY OF STATE,
Ottawa, Ont.

[43. THE SECRETARY OF STATE TO THE LIEUTENANT-GOVERNOR.]

$\left\{\begin{matrix}4429\\10203\end{matrix}\right\}$

DEPARTMENT OF THE SECRETARY OF STATE,
OTTAWA, 27th July, 1887.

SIR,—I have the honour to acknowlege the receipt of your despatch, 561—1887, of the 12th inst., in continuation of previous correspondence on the subject of certain licenses to cut timber granted by the Government of Canada within the "disputed territory."

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto, Ont.

[44. THE ATTORNEY-GENERAL OF ONTARIO TO THE SECRETARY OF STATE FOR THE COLONIES.]

LONDON, 16th August, 1887.

SIR,—I beg leave to state in writing the substance of what I mentioned in the personal interview which you were good enough to give me a few days ago.

You are aware that the Judicial Committee of the Imperial Privy Council, to which the question as to the boundary between the Provinces of Ontario and Manitoba was referred by Order-in-Council of 26th June, 1884, made a Report which was confirmed by Order-in-Council of 11th August, 1884, determining the question referred to it.

The reference took place, so far as the two Provinces were concerned, under a Memorandum of Agreement, and special case of date 18th December, 1883, confirmed by Ontario Act 47 Vict. Cap. 2, and by Manitoba Act 47 Vict. Cap. 2.

By clause 35 of the Memorandum of Agreement, it was provided that the decision of the Privy Council should be carried into full effect by such (if any) future legislation as might be necessary, or as might be recommended by the Committee of the Privy Council to which the reference was made.

By a Report of a Committee of the Privy Council of Canada, approved by His Excellency the Governor-General-in-Council on 6th May, 1884, the Committee advised that His Excellency's Government should express their readiness to be bound by the decision of the Committee of the Imperial Privy Council to which the reference was to be made; and Counsel for the Dominion applied to be heard, and was heard, as well Counsel for the two Provinces, on the argument of the case. The argument was as to the westerly and part of the northerly boundary of the Province.

The report of the Judicial Committee, after setting out what *it* determined to be the true boundary, continued in the following words:—"That without expressing an opinion as to the sufficiency or otherwise of concurrent legislation of the Provinces of Ontario and Manitoba and of the Dominion of Canada (if such legislation should take place), their Lordships think it desirable and most expedient that an Imperial Act of Parliament should be passed to make this decision binding and effectual."

The Government of Ontario is most desirous that an Act of the Imperial Parliament should be passed in accordance with this recommendation.

The delay of the Province in making an application for this purpose has arisen from a desire that the application should be made through the Federal Government; but the Federal Government having no interest in procuring such an Act has not deemed it necessary to take any active step in the matter.

I have, etc.,

(Signed) O. MOWAT.

To the Right Honourable
Sir Henry T. Holland, Bart.,
Secretary of State for the Colonies, etc., etc.

[45. The Attorney-General of Ontario to the Secretary of State for the Colonies.]

London, August 16th, 1887.

Sir,—I beg leave to enclose, for your consideration, a draft bill for confirming the boundary of the Province of Ontario, as recommended by the Order of Her Majesty in Council of the 11th August, 1884, and also copies of some correspondence between the Government of the Dominion and the Government of the Province on the subject.

I have, etc.,

(Signed) O. MOWAT.

To the Right Honourable,
Sir Henry T. Holland, Bart.,
Secretary of State for the Colonies, etc., etc.

Note.—A copy of Her Majesty's Order-in-Council of the 11th August, 1884, was also sent to Sir Henry Holland, with the following note in the margin, with reference to the exceptions in the Order which in the copy were distinguished by brackets, namely: [their Lordships find the true boundary between the same two Provinces to the north of Ontario and to the south of Manitoba] and [which forms the boundary eastward of the Province of Manitoba].

"*Mem.*—The words in brackets are in the Report through inadvertance. Manitoba has no territory north of Ontario, the territory north not having yet been assigned by the Dominion to any province. The inadvertence does not affect the sense or substance of the description otherwise set forth in the Report. The words in brackets are necessarily omitted in the draft bill."

(Signed) O. M.

[46. Draft Bill to carry into effect Recommendation of Privy Council.]

Whereas, certain boundaries of the Provinces of Ontario and Manitoba were in dispute, and the said two Provinces, with the concurrence of the Dominion of Canada, agreed to submit the question to Her Majesty in Council for determination,

And whereas, Her Majesty, by her Order-in-Council of 26th July last, was pleased to refer the said question unto the Judicial Committee of the Privy Council,

And whereas, the Lords of the Committee, in obedience to Her Majesty's said order of reference, took the matter into consideration, and, after hearing Counsel of the Dominion of Canada as well as of the Provinces, reported to Her Majesty their opinion, that legislation by the Dominion of Canada, as well as by the Province of Ontario, was necessary to give binding effect as against the Dominion and the Province to a certain award theretofore made with respect to the said boundary, and that as no such legislation had taken place the award was not binding; that, nevertheless, their Lordships found so much of the boundary lines laid down by that award as related to the territory in dispute between the Province of Ontario and the Province of Manitoba to be substantially correct and in accordance with the conclusion which their Lordships drew from the evidence laid before them; and that, upon the evidence, their Lordships found the true boundary between the western part of the Province of Ontario and the south-eastern part of the Province of Manitoba to be as in their said report stated, and further found the northern boundary of the said Province of Ontario to be in part as in said report is set forth; and their Lordships further reported that, without expressing an opinion as to the sufficiency or otherwise of concurrent legislation of the Provinces of Ontario and Manitoba and of the Dominion of Canada (if such legislation should take place), their Lordships thought it desirable and most expedient that an Imperial Act of Parliament should be passed to make the decision of their Lordships binding and effectual,

And whereas, Her Majesty, having taken the said report into consideration, was pleased by and with the advice of the Privy Council to approve thereof and to order that the same should be observed, obeyed, and carried into execution,

And whereas, the boundaries of the Province of Ontario, so far as set forth in the said report, are the boundaries hereinafter set forth, and it is desirable and expedient that the same should be by this Act confirmed and made binding and effectual for all purposes:

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords, spiritual and temporal, and of the Commons in the present Parliament assembled, and by the authority of the same,

And it is hereby enacted and declared that the true boundaries of the said Province of Ontario are in part as follows:—"So much of the line drawn to the Lake of the Woods through the waters eastward of that lake and west of Long Lake, which divide British North America from the territory of the United States, and thence through the Lake of the Woods to the most north-western point of that lake as runs northward from the United States boundary; and from the most north-western point of the Lake of the Woods, a line drawn due north until it strikes the middle line of the course of the river discharging the waters of the lake called Lake Seul, or the Lonely Lake, whether above or below its confluence with the stream flowing from the Lake of the Woods towards 'Lake Winnipeg,' and 'proceeding eastward from the point at which the before mentioned line strikes the middle line of the course of the river last aforesaid along the middle line of the course of the same river (whether called by the name of the English River or as to the part below the confluence by the name of the River Winnipeg) up to Lake Seul, or the Lonely Lake, and thence along the middle line of Lake Seul, or the Lonely Lake, to the head of that lake, and thence by a straight line to the nearest point of the middle line of the waters of Lake St. Joseph and thence along that middle line until it reaches the foot or outlet of that lake, and thence along the middle line of the (Albany) river by which the waters of Lake St. Joseph discharge themselves until it reaches a line drawn due north from the confluence of the Rivers Mississippi and Ohio.'"

[47. The Secretary of State for the Colonies to the Attorney-General of Ontario.]

Downing Street, 27th August, 1887.

Sir,—I am directed by the Secretary of State for the Colonies to acknowledge the receipt of your two letters of the 16th instant respecting the Order of Her Majesty in Council of the 11th of August, 1884, confirming the Report of the Judicial Committee of the Privy Council on the question of the boundary dispute between the Provinces of Ontario and Manitoba.

I am to acquaint you, in reply, that the subject will receive the immediate attention of Sir H. Holland, and that the draft bill confirming the Order-in-Council which you have prepared will be submitted to the Law Officers of the Crown for their report.

I am, sir,

Your obedient servant,

(Signed) JOHN BRAMSTON.

Oliver Mowat, Esq.

[48. The Secretary of State to the Lieutenant-Governor.]

$\left\{ \frac{6468}{10203} \right\}$

Department of the Secretary of State,
Ottawa, 16th November, 1887.

Sir,—I have the honour to acquaint you, for the information of your Government, that His Excellency the Governor General has had under his consideration in Council your despatch, dated 12th July, 1887, having reference to the proposal emanating from this Government on the subject of certain licenses to cut timber within the so-called disputed territory, which have been granted by the Government of Canada.

I have now to suggest that the Joint Commission, which has been proposed for the purpose of administering the lands in the territory referred to until all the issues as between the Dominion and the Province of Ontario shall have been finally set at rest, should also be charged with the duty of administering the timber upon such lands.

I have, etc.,

(Signed) J. A. CHAPLEAU,
Secretary of State.

His Honour
The Lieutenant-Governor of Ontario,
Toronto, Ont.

[49. The Secretary of State to the Lieutenant-Governor.]

$\left\{ \frac{6482}{4909} \right\}$

Department of the Secretary of State,
Ottawa, 19th November, 1887.

Sir,—With further reference to the subject of the proposal of the appointment of a Joint Commission for the purpose of administering the lands, and the timber upon such lands, within the so-called disputed territory, I have the honour to transmit to you herewith, for the information of your Government, copy of an approved Minute of Council embodying the views of His Excellency's advisers on your despatch of the 30th May, 1887, and renewing the suggestion that joint titles should be issued by the Governments of Canada and Ontario to persons in possession where there is no dispute as to boundaries,

and that in the cases where such dispute exists, a Joint Commission should be named charged with the duty of settling such disputes and granting titles, the powers of such Commission to be not exceeding those conferred by the Land Acts of the Dominion and the Province respectively upon the executive officers administering their public lands.

I have, etc.,

(Signed) HENRY J. MORGAN,
Acting Under Secretary of State.

His Honour
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto, Ont.

(*Enclosure with above.*)

[50. CERTIFIED COPY OF A REPORT OF A COMMITTEE OF THE HONOURABLE THE PRIVY COUNCIL, APPROVED BY HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL, ON THE 2ND NOVEMBER, 1887.]

The Committee of the Privy Council have had under consideration a despatch dated 30th May, 1887, from the Lieutenant-Governor of Ontario, in reply to a proposal from the Dominion Government that a Joint Commission be appointed by the two governments to decide on the patents to be issued to settlers and others for lands situated within the so-called disputed territory..

The Minister of the Interior, to whom the question was referred, submits that although he is of opinion that no good purpose would be served by a discussion as to the merits of past controversies, he is unable to concur in the objections urged by the Government of Ontario to the suggestions made for the quieting of titles in that territory. Great delays have, no doubt, taken place, but it should be remembered that as far back as 1872 the Government of Canada urged the submission of this question to the decision of the Judicial Committee of the Privy Council, and that the greater part of the delay which has occurred has arisen from the refusal of the Government of Ontario to concur in that suggestion.

The Minister states that since the receipt of the despatch of the 30th May last, judgment has been rendered by the Supreme Court of Canada on the question of the Indian title, which remains still in dispute, and although that judgment was unfavourable to the contentions of the Government of Canada, the minority of the Court in very able judgments dissented from the decision. That permission has now been granted to appeal to the Judicial Committee of the Privy Council, and every effort will be made to expedite the case before that tribunal, the only object of the Government of Canada being to secure at the earliest possible moment a final and authoritative settlement of these questions. In the meantime, however, the Minister is of opinion that it is most desirable, if possible, that some arrangement should be arrived at by which the rights of miners in the disputed territory may be secured and the development of that great industry promoted.

The Minister further states that in addition to these claims there are a considerable number of settlers in the territory who have not yet received their titles. At Rat Portage a number of persons have made surveys, squatted upon land, erected buildings, and in some cases have sold their property which has passed into hands of second and third parties, and great uncertainty and inconvenience have arisen in all these cases through the absence of satisfactory titles.

The Minister reiterates his opinion that it is the duty of both Governments, in the general interests of the country, to do what may be possible to remove this uncertainty and inconvenience, and with that view he renews the suggestion made by him that joint titles should be issued by the Governments of Canada and Ontario to persons in possession,

where there is no dispute as to boundaries, and that in the cases where such dispute exists a Joint Commission should be named charged with the duty of settling such disputes and granting titles, the powers of such Commission to be not exceeding those conferred by the Land Acts of the Dominion and the Province respectively upon the executive officers administering their public lands.

The Minister, with a view to the avoidance of delay, expresses his readiness to meet the Commissioner of Crown Lands for the Province of Ontario, and by personal conference arrange all the details necessary for carrying out with the least possible delay these suggestions.

The Committee concurring in the report of the Minister of the Interior recommend that the Secretary of State be authorized to transmit a copy of this Minute to the Lieutenant-Governor of Ontario for the consideration of his Government.

All of which is respectfully submitted for your Excellency's approval.

(Signed) JOHN J. McGEE,
Clerk Privy Council.

[51. The Deputy Attorney-General of Ontario to Messrs. McCarthy & Co.]

Toronto, 3rd January, 1888.

Messrs. McCarthy & Co.,
Barristers, Toronto.

(Queen *vs.* St. Catharines.)

Dear Sirs,—It appears from the shorthand writers' notes on the application for leave to appeal made to the Judicial Committee in the suit of this Province against The St. Catharines Milling and Lumber Co., that their Lordships, in giving judgment, expressed a desire that the Dominion Government should intervene in this case, or state an independent special case of their own, so that the question might be decided between those parties who are most directly interested in it.

I am desired by the Attorney-General to say that the suggestion has the hearty concurrence of the Provincial Government, and communication is now being had with the Dominion Government to know whether they are disposed to act on the recommendation of their Lordships.

An application to the same effect was made to the Dominion Government before the hearing in the High Court, but was not acceded to. The subsequent adoption of the defence by the Dominion Government has, however, placed the matter in a new position, and the application has therefore been renewed. I hope you will advise the suggestion of their Lordships to be acted upon.

Yours truly,

(Signed) E. F. B. JOHNSTON.

[52. The Lieutenant-Governor to the Secretary of State.]

Government House,
Toronto, 5th January, 1888.

Sir,—Adverting to previous correspondence upon the subject and having reference to your despatches of the 16th and 19th November, I have to state that my Government has had these despatches under consideration, and that they would have been answered somewhat sooner but for the illness and absence of my Commissioner of Crown Lands,

to whose Department the subject relates. My advisers continue to think that for the reasons set forth in the despatch of my predecessor, dated 30th May last, a Joint Commission at this period would be of no service, and not improbably would create further delays. My advisers are of opinion that the views there expressed have received additional confirmation from the fact that in answering that despatch there has been a further delay of six months, and also from the further fact that during these six months nothing appears to have been done respecting Imperial legislation to confirm the decision as to the Provincial boundaries, though such legislation was recommended by the Judicial Committee of the Privy Council, and was referred to in a despatch from the Colonial Secretary, dated 27th August, 1884, and has since that time been repeatedly urged by the Ontario Government on the attention of the Federal Government.

Meanwhile, agreeably to the intention intimated in my predecessor's despatch, patents have been issued and are being issued here to all settlers, and to claimants of mining rights, where there was no dispute, and where applicants had taken the necessary steps to entitle them to patents, by making surveys, filing plans and evidence, paying purchase money, etc. Disputed cases have been deferred until they can be inquired into by the Commissioner of Crown Lands personally, or by some other officer of my Government.

With respect to timber limits, the difficulty of dealing with them provisionally is thought to be very great. Timber limits cannot be sold with advantage while the question of ownership continues to be in litigation, and the Dominion system of granting timber licenses to private applicants without competition, and without requiring any bonus is so diametrically opposed to the Ontario method, and (in the opinion of my advisers) so fundamentally objectionable, that there does not appear to be any common ground on which a Joint Commission could proceed, especially in view of the further fact that the Dominion licenses were granted, my Council informs me, in spite of the remonstrances of the Ontario Government, and while that Government was deliberately abstaining from granting any licences until the right should be authoritatively declared.

My Government desires to express its regret that instead of proposing a Joint Commission at this late date, after all the Canadian Courts have decided in favor of the Province, the Government of His Excellency is not prepared to accede to either of the suggestions contained in my predecessor's despatch, which were made in view of the Judicial decision in favour of the Provincial right, namely, that the Dominion Government should now abandon its claim, or that, without abandoning it, the Dominion Government should announce its intention of recognizing in any event all Provincial patents which may be issued before its appeal from the Supreme Court is disposed of, such recognition being subject to any fair or necessary conditions as between the two Governments.

With reference to the observation of the Minister of the Interior, that in 1872 the Dominion Government had urged a submission of the boundary question to the Privy Council, and that delay "has arisen from the refusal of the Government of Ontario to "concur in that question," my advisers observe that it is not correct to say that the Ontario Government refused to concur in such suggestion; and that on the contrary the facts are these:—On the 19th April, 1872, the Ontario Government proposed as conventional boundaries the same boundaries substantially as were afterwards determined to be the true boundaries, first by the arbitrators and then by the Judicial Committee of the Privy Council; and if this proposal had been accepted, all the delay of the last fifteen years would (my advisers say) have been prevented. The Federal Government, on the 16th May, 1872, rejected the boundaries so suggested, and in lieu proposed the reference to the Judicial Committee of the Privy Council, which is mentioned in your despatch. In the reply to this proposal (31st May) the Ontario Government "without for the present dealing definitely with the proposal of the Government of Canada for a reference to the Judicial Committee, made a suggestion that the matter might be settled by reference to a Commission sitting on this side of the Atlantic." To this suggestion no answer was made until the 7th November following. On the 3rd January, 1873, the Ontario Legislative met. On the 23rd March a resolution was passed by the Legislative Assembly approving of a reference of the question either to arbitration or to the Privy Council, according as the Lieutenant-Governor in Council should see fit. An arbitration was in the same year

agreed to by the Federal Government then in office, and as is well known with general concurrence. It thus appears that a reference to the Privy Council was not refused by the Ontario Legislature or Government; and that a counter-suggestion of that Government was accepted by the Dominion Government and acted upon.

My advisers observe that, if the award subsequently made had not been repudiated by the Federal Government, the delays and complications of the last nine years would have been avoided, and the boundaries would have been substantially the same as the boundaries since decided by the Privy Council. My advisers further say that it could not possibly have been anticipated that an award to be made by impartial arbitrators, mutually chosen, would be repudiated by the Federal authorities, or that that Government would have gone on for years afterwards dealing wrongfully with Ontario territory, as if it belonged to the Dominion. I hope, in the interest of all who have to do with the territory, delays from any cause will not occur in the future.

I have, etc.,

(Signed) A. CAMPBELL,
Lieutenant-Governor of Ontario.

The Honourable,
THE SECRETARY OF STATE,
Ottawa, Ont.

[53. THE LIEUTENANT-GOVERNOR TO THE SECRETARY OF STATE.]

GOVERNMENT HOUSE,
TORONTO, 5th January, 1888.

SIR,—I have the honour to inform you that it appears from the shorthand writer's notes on the application for leave to appeal made to the Judicial Committee of the Privy Council in the suit of this Province against The St. Catharines Milling and Lumber Company, that their Lordships in giving judgment expressed a desire that the Dominion Government should intervene in this case, or state an independent special case of their own, so that the question might be decided between those parties who are most directly interested in it.

The suggestion has the hearty concurrence of my Government, and they desire to know whether the Dominion Government are disposed to act on the recommendation of their Lordships.

Though an application to the same effect made to the Dominion Government before the hearing in the High Court was not acceded to, the subsequent adoption of the defence by the Dominion Government has placed the matter in a new position; and I shall be glad if the Dominion Government should consider that the recommendation of their Lordships of the Judicial Committee may be acted upon.

I have, etc.,

(Signed) A. CAMPBELL,
Lieutenant-Governor of Ontario.

The Honourable
THE SECRETARY OF STATE,
Ottawa, Ont.

[54. Messrs. McCarthy & Co. to the Deputy Attorney-General.]

Toronto, January 7th, 1888.

E. F. B. Johnston, Esq.,
Deputy Attorney-General,
Toronto.

(Queen *vs.* St. Catharines.)

Dear Sir,—We are favoured with your letter of 3rd instant herein, and beg to say in reply that we carefully note your statement that the Provincial Government is in communication with the Dominion Government, with a view to ascertaining if the Dominion Government are disposed to act on the recommendation of the Judicial Committee, that they should intervene in this case or state a special case of their own. We beg also to say, that we brought before the Minister of Justice of Canada the recommendation of their Lordships, by serving him with a copy of the order granting special leave to apply to the Privy Council. We beg further to say, that we are proceeding with and have very nearly finished the printing of the case for the Privy Council, and presume that its completion need not be delayed in consequence of the correspondence referred to in your letter.

Yours truly,

(Signed) McCARTHY, OSLER, HOSKIN & CREELMAN.

[55. The Secretary of State to the Lieutenant-Governor.]

Department of the Secretary of State.
Ottawa, 10th January, 1888.

{46/4909}

Sir,—I have the honour to acknowledge the receipt of your despatch of the 5th inst., with further reference to the subject of the proposal for the appointment of a Joint Commission for the purpose of administering the lands, and the timber upon such lands, within the so-called disputed territory, and to state that the matter will receive consideration.

I have, etc.,

(Signed) G. POWELL,
Under-Secretary of State.

His Honour,
The Lieutenant-Governor of Ontario,
Toronto, Ont.

[56. The Secretary of State to the Lieutenant-Governor.]

Department of the Secretary of State,
Ottawa, 10th January, 1888.

Sir,—I have the honour to acknowledge the receipt of your despatch of the 5th inst., with reference to the suit of the Province of Ontario against The St. Catharines Milling and Lumber Company, embodying the words of a desire, alleged to have been

expressed by the Judicial Committee of the Privy Council, that the Dominion Government should intervene in said case, and to state that the matter will receive consideration.

I have, etc.,

(Signed) G. POWELL,
Under Secretary of State.

His Honour
THE LIEUTENANT-GOVERNOR OF ONTARIO,
Toronto, Ont.

[57. THE DEPUTY ATTORNEY-GENERAL TO MESSRS. MCCARTHY & Co.]

TORONTO, 11th January, 1888.

Messrs. McCARTHY & Co.,
Barristers, Toronto.

(QUEEN *vs.* ST. CATHARINES.)

DEAR SIRS,—I have the honour to acknowledge the receipt of yours of the 7th inst., and beg to say that the Attorney-General agrees with you, that there is no reason for delaying the completion of the Case in consequence of the correspondence referred to.

Yours truly,

(Signed) E. F. B. JOHNSTON,
Deputy Attorney-General.

[58. MESSRS. MCCARTHY & Co. TO THE DEPUTY ATTORNEY-GENERAL.]

TORONTO, January 14th, 1888.

E. F. B. JOHNSTON, Esq.,
Deputy Attorney General,
Toronto.

(QUEEN *vs.* ST. CATHARINES.)

DEAR SIR,—Will you kindly instruct your Ottawa agents to settle and issue the order dismissing our appeal herein in the Supreme Court. This order ought to be made part of the Privy Council case. Please do this at once. As the taxation of costs may occupy some time, we think that it would be better to simply dismiss the appeal with costs, leaving it open to the Attorney-General to tax the costs later on. Our agents in Ottawa are Messrs. McIntyre, Lewis & Code.

Yours truly,

(Signed) McCARTHY, OSLER, HOSKIN & CREELMAN.

[59. The Deputy Attorney-General to Messrs. McCarthy & Co.]

Messrs. McCarthy & Co., Barristers, Toronto.

Toronto, 17th January, 1888.

(Queen *vs.* St. Catharines.)

Dear Sirs,—I have written to our agents in Ottawa, instructing them to take the step mentioned in your letter of the 14th inst.

Yours truly,

(Signed) E. F. B. JOHNSTON.

(No. 74).

Return of copies of the evidence taken by Emilius Irving, Esquire, Q.C., with reference to the Ontario Grain and Seed Company, and of the Report, if any, made by him with regard to the said Company, its formation, or operations. (*Not printed.*)

RETURN

To an Order of the House, dated the 19th March, 1888, for copies of all correspondence between the Minister of Education and any publisher or any person respecting the authorization of Text Books, or the right to publish the same, subsequent to that already brought down.

A. S. HARDY,
Provincial Secretary.

Provincial Secretary's Office,
Toronto, 23rd March, 1888.

(*Mr. Creighton.*)

READING BOOKS.

TORONTO, January 27th, 1886.

Hon. G. W. Ross.

DEAR SIR,—We understand that the Government are asking for tenders for publishing the 5th Reader. As we are wholesale stationers and jobbers we would be pleased to have an opportunity to tender.

Yours very truly,

BARBER & ELLIS CO'Y.
J. F. E.

EDUCATION DEPARTMENT,
TORONTO, 29th January, 1886.

SIRS,—The contract for publishing the Fifth Reader has already been awarded on tender asked for by circular.

Yours truly,

G. W. ROSS.

Messrs. BARBER & ELLIS,
15 Jordan street, Toronto.

EDUCATION DEPARTMENT.
TORONTO, 2nd February, 1886.

MY DEAR SIR,—In the contract for the publication of the High School Reader it is agreed that some of the copy should be put in at once, and that all the copy should be in the printers' hands before the 1st April. The contractor would like to get the copy in such a shape as to render many corrections unnecessary. Could you call in any day this week in the forenoon and see me?

Yours truly,

G. W. ROSS.

JNO. E. BRYANT, Esq., M.A.
Educational Weekly,
Toronto.

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9 VICTORIA CHAMBERS,
LONDON, S. W. 9th March, 1886.

SIR,—I have the honor to transmit to you herewith a circular I have received from Messrs. W. & R. Chambers of Edinburgh, together with a complete set of the Graduated Readers that are enumerated.

Messrs. W. & R. Chambers desire if possible to secure their introduction into the schools of the Province of Ontario, and I have no doubt that you will write to them on the subject.

I have the honor to be, Sir,
Your obedient servant,

CHARLES TUPPER.

The Hon. THE MINISTER OF EDUCATION,
Toronto, Ont.

EDUCATION DEPARTMENT.
TORONTO, March 24th, 1886.

SIR,—The Minister desires me to acknowledge the receipt of the Reading Books together with your letter of the 9th instant which will receive his consideration.

A letter has been sent to Messrs. W. & R. Chambers, as suggested.

I have the honor to be etc.,

ALEXANDER MARLING,
Secretary.

Hon. Sir CHAS. TUPPER, K.C.M.G.,
High Commissioner for Canada,
London, England.

EDUCATION DEPARTMENT.
TORONTO, March 24, 1886.

GENTLEMEN,—The Minister of Education for Ontario desires me to acknowledge the receipt of a set of your graduated Readers, through the High Commissioner for Canada at London, and he will give them his careful consideration.

Your obedient servant,

ALEXANDER MARLING,
Secretary.

Messrs. W. & R. CHAMBERS,
Publishers,
Edinburgh, Scotland.

TORONTO, Sept. 6th, 1886.

The Hon. THE MINISTER OF EDUCATION,
Education Department,
Toronto.

SIR,—We hereby respectfully beg to make application for permission to print and publish the book entitled "The High School Reader," now authorized as a text-book for Ontario Schools, as soon as possible after the expiration of the contract with Messrs. Hunter, Rose & Co., the present publishers.

We are prepared to fulfil the conditions required by the Department in the matter.

We have the honor to be, Sir,
Your obedient servants,

WARWICK & SONS.

EDUCATION DEPARTMENT,
TORONTO, 18th Sept. 1886.

DEAR SIRS,—I beg to acknowledge the receipt of your two favors of the 6th instant respecting the publication of the High School Reader and the Public School History of England and Canada, and to state that as soon as the right of publication held by the present

publishers expires, the Department will consent to the appointment of the arbitration under the agreement in order that the privilege of publication might be extended to you or any other publishers that might apply.

Yours truly,

GEO. W. ROSS.

Messrs. Warwick & Sons,
Toronto.

The Copp Clark Company,
Toronto, 9th Sept. 1886.

Hon. G. W. Ross,
Minister of Education.

Dear Sir,—We are informed that there has been published a book of "Selections from the High School Reader" containing the pieces for Third Class study. We can hardly conceive, if this is correct, that it has been done with the knowledge of your Department; at the same time, if such is the case, we should like to have the same privilege accorded to us. Will you kindly inform us if it is permissible,

Your obedient servants,

THE COPP CLARK CO. (LIMITED).
H. J. Clark.

Education Department,
Toronto, Sept. 16th, 1886.

Gentlemen,—I am directed by the Minister to state that no such work as "Selections from the High School Reader" has been published, or is likely to be,

Your obedient servant,

ALEX. MARLING,
Secretary.

The Copp Clark Co.,
Publishers, Toronto.

Orthoëpist.

Toronto, 20th Sept. 1886.

My Dear Sir,—Herewith find MSS. of your proposed Orthoëpist. I cannot take the responsibility of authorizing this book, particularly as it would be regarded as explanatory of our Readers, and the cost added by carping critics to the cost of the Readers, in order to make a case against the Government.

There are other objections of an intrinsic character which I need not specially refer to, the main one being my doubt of the value of such lists of words as are here contained to the pupil studying our Second and Third Readers. In order rightly to appreciate diacritical marks and the force of accented syllables, a considerable maturity of mind is necessary, and with the tendency among our teachers to ask their pupils to memorize what really should be explained to them, I fear such a text book would only tend to perpetuate bad teaching and cram.

Yours truly,

GEORGE W. ROSS.

G. Mercer Adam, Esq.,
184 Spadina Avenue, Toronto.

TORONTO, 7th March, 1887.

MY DEAR SIR,—I have looked over the proofs of your proposed work, and have one or two suggestions to offer. (1) I think the book should be called "High School Orthoëpist," or "High School Word Book." I am trying to classify the titles of the books according to the schools for which they are particularly intended, such as "Public School Geography," "High School Geography, etc. (2) I think your scheme of placing the antonym in parentheses will be a failure, (a) it is slightly confusing, and (b) it is almost impossible to give the exact opposite of a mental expression.

Your sentences applying words to their intended use are very suggestive, and highly commendable.

When do you expect to complete your work?

Yours truly,

GEORGE W. ROSS.

G. MERCER ADAM, Esq.,
184 Spadina Avenue, Toronto.

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184 SPADINA AVENUE, Tuesday May 8th.

MY DEAR SIR,—Pray accept my thanks for your kind favor of yesterday. "The High School Word Book" will answer very well for the title and shall be adopted.

I had myself come to the conclusion that to sandwich in the antonym after synonymous equivalent of the word illustrated was apt to confuse, besides being difficult to get the right and fit word in many cases.

I have therefore suggested to Mr Connor, the propriety of my taking out these words and of inserting a separate line of antonyms between the synonyms and the paragraph devoted to synonyms discriminated.

I think this will meet the difficulty and be more satisfactory on the whole. I am glad you find the hints in differentiating the synonyms and the explanation of their practical use suggestive. I have taken pains in doing this part of the book, drawing largely upon the old fashioned "Crabb" and upon the more modern work of Archdeacon Smith. Our indebtedness to these sources will of course be acknowledged in the preface.

Mr. Connor writes me that the first part on Orthoëpy which he has had in charge, will be finished this week, when he will go at the Derivatives for part three, and both of us are at work on the matter for the concluding Part (4) on Common Blunders and incorrect English.

Another month should see the work done; I am now half through the synonyms part which, you may conceive, is necessarily slow work, which has to be carefully and critically done.

With much esteem and respect,

Yours very sincerely,

G. MERCER ADAM.

ST. THOMAS, Feby 27th 1887.

MY DEAR SIR,—I am sorry that such a poor work as the "High School Word Book' has been placed among the authorized texts. Were it not for the chances that examination questions may be based upon it I should throw it aside at once. Apart from its inconsistencies and errors I am sure its use, to any great extent will tend to encourage a wrong method of taking up the study of English. I earnestly hope the questions at the departmental examinations will not show that much importance is attached to such a

style of teaching as this work would appear to indicate. Take the chapter on synonyms and I cannot think any judicious teacher would care to follow the book. The matter may have been gathered from such works as Crabb, Whately, etc., but an indiscriminate transfer for High School purposes is to my mind the reverse of judicious.

Yours, etc.,

J. MILLAR.

Hon. G. W. Ross, M.P.P.,
Toronto.

TORONTO, 1st March, 1888.

MY DEAR SIR,—It was not intended that the High School Word Book should be more than a hand book of reference for Orthoëpy, Synonyms, etc. I understand it is not very extensively used in the High Schools because Williams' "Composition" and McElroy's "Structure of English Prose," with the varied notes, fully cover the ground.

The efforts made to secure more accurate pronunciation by the authorization of Ayres "Orthoëpist" some time ago have proved very satisfactory. The "Word Book" is really an extension of Ayres and, if used as intended by the Department, would be of some service.

With kind regards,

Yours truly

GEO. W. ROSS,

JOHN MILLAR, Esq., M.A.
St. Thomas.

TORONTO, July 21st, 1887.

SIR,—We notice on the recently published list of authorized books for High Schools, that "Ayres' Orthoëpist" and "Ayres' Verbalist" are inserted without anything to designate which of the two editions published in Canada you have adopted.

We have surrendered the copyrights of our editions, and bound ourselves to publish these books in accordance with your Departmental regulations.

We, therefore, think it very unfair that another firm should be allowed to hold the exclusive right, and publish, as it pleases, in opposition to us without restraint of any kind respecting material or workmanship. In fact, as these books now stand on the list, you designate Gage's editions as the ones to be used. Our editions are known to teachers and booksellers as "Ayres' and Armstrong's Orthoëpist," "Ayres' and Armstrong's Verbalist," while the other editions are known as named on your list.

Your obedient servants,

For the CANADA PUBLISHING CO. (Lt.),
S. G. B.

Hon. G. W. Ross,
Minister of Education, City.

TORONTO, 23rd July, 1887.

MY DEAR SIR,—I have made the corrections you suggested in the title of the "Verbalist" and "Orthoëpist." I am sorry you did not let me have them before the list was issued.

I was under the impression that you agreed to publish the High School Music Reader at 60cts. If you did not agree so to do, why not do it now? It certainly appears odd to charge nearly double the price for the High School Reader you ask for the Public School Reader.

Yours truly,

GEO. W. ROSS.

S. G. BEATTY, Esq.,
Canada Publishing Co., Toronto.

DEPUTATION *re* READERS.

TORONTO, Oct. 4th, 1886.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—The deputation who waited upon you on Friday, the 1st instant, *re Inferior work now being done on Ontario Readers by W. J. Gage & Co.*, desire to have a copy of the agreement between your Department and publishers of said Readers, together with samples of said books as *material* for preparing *confidential* report, as suggested by you, as to the relative merits of the specimens originally submitted and that now being done by the firm of W. J. Gage & Co.; and take the liberty of asking you to furnish us with a copy of said agreement and samples mentioned.

Trusting you will kindly accede to our request.

I am, on behalf of Deputation,
Yours respectfully,

R. GLOCKLING,
Care of Carswell & Co.
26 Adelaide Street, City.

TORONTO, 13th October, 1886.

MY DEAR SIR,—Please comply with the request herein contained as far as possible.

Yours truly,

GEO. W. ROSS.

GEO. E. THOMAS Esq.,
Assistant Queen's Printer,
Toronto.

OFFICE OF THE QUEEN'S PRINTER,
PARLIAMENT BUILDINGS.

TORONTO, Oct. 16th, 1886.

SIR,—As directed by the Hon. G. W. Ross, Minister of Education, I herewith forward to you, in answer to request made in your communication of 4th instant, for use of deputation therein mentioned, a copy of Indenture of Agreement between the Ontario Government and W. J. Gage & Co. I also send one set of Ontario Readers as published by that firm.

Will you kindly return to this office the copy of Indenture and the books, when you have finished with them.

I have the honor to be,
Your obedient servant,

GEO. E. THOMAS,
Assistant Queen's Printer.

R. GLOCKLING, Esq.
Carswell & Co.
Toronto.

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TORONTO, October 19th, 1886.

Hon. G. W. ROSS,
Minister of Education.

SIR,—Permit me to acknowledge the receipt of parcel—per Mr. Thomas. In reply to communication contained therein, have to say that you do not seem to comprehend the request contained in my letter of the 4th instant, in which I asked on behalf of the Deputation for sample copies supplied your Department, as called for by paragraph 5 of agreement of November, 1884, in order that we might prepare a report as to the relative merits of the work then done and that now done by the firm of W. J. Gage & Co. The Deputation would therefore request that you grant them another interview at your earliest convenience, and would suggest that you have on hand the said samples, when we will be provided with samples of present work of said firm, and present then and there the report suggested by you.

Awaiting your reply, I am
Yours respectfully,

R. GLOCKLING,
Care of Carswell & Co.,
26 Adelaide Street East, City.

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TORONTO, 20th October, 1886.

DEAR SIR,—I sent your former letter to Mr. Thomas with instructions to comply with the request therein contained. Your letter of yesterday I have also sent, in order that he may correct his previous mistake.

If you could make me a written report, it would be of more service than any verbal statement. This you could send me by post. However, I shall be happy to give you an interview, if you think it necessary, on Monday of next week.

Yours truly,

GEO. W. ROSS.

MR. R. GLOCKLING,
Care of R. Carswell & Co.
26 Adelaide Street East,
Toronto.

OFFICE OF THE QUEEN'S PRINTER,
PARLIAMENT BUILDINGS,
TORONTO, October 22nd, 1886.

SIR,—As requested by you in your communication of the 19th inst., I have much pleasure in sending, by order of the Hon. G. W. Ross, Minister of Education, one set of Ontario Readers, as submitted by the firm of W. J. Gage & Co., as samples of their printing and binding. You will oblige by returning these sample books to this office at your earliest convenience.

Several of the books have been partly taken to pieces, so as to examine them more thoroughly.

I have the honor to be,
Your obedient servant,

G. E. THOMAS,
Assistant Queen's Printer.

Mr. R. GLOCKING,
26 Adelaide St., Toronto.

TORONTO, Nov. 1st, 1886.

Hon. G. W. Ross,
Minister of Education, Toronto.

SIR,—We, the undersigned, being practical bookbinders, and thoroughly experienced in that branch of our trade known as Cloth Forwarding, under which branch the Ontario Readers are produced, declare that we have examined samples of the above books now being produced by W. J. Gage & Co., and find them in every way inferior as to workmanship, and give abundant evidence as to the work having been performed by unskilled hands. We also find they are sewn with wire, a system that requires a good quality of mull—the mull being the only support the leaves of the book have.

The mull used in the samples examined by us is of very inferior quality, and not of sufficient strength to withstand ordinary wear, all of which we are prepared to substantiate in any way desirable to you.

Respectfully submitted,

RY. GLOCKING,
JOHN BARFF,
JAMES ROSS.
ALF. MEREDITH.

The undersigned report as follows, in regard to the representations of the Bookbinders' Committee of the Trades and Labor organization on the subject of the binding of the Ontario Readers as done by Messrs. W. J. Gage & Co.

1. We interviewed Messrs. Glocking and Jury, and find the chief cause of complaint is *inferior workmanship*, and not so much inferior material.

2. We inspected the sample copies on which the report of the Committee was based, and find in them evidence of carelessness as to folding and trimming the books, cutting and pasting the mull on covers and as to putting the books in their cases.

3. We are of opinion that such samples are the exception rather than the rule in going through any quantity of the firm's books, as we ourselves purchased samples from a city store, and find them very fairly in accord with the terms of the bond as to quality and workmanship.

4. The mull used by Gage & Co. is better than common mull, but we consider it desirable that a mull of stronger and coarser texture should be used with the Brehmer machine in binding these books.

G. E. THOMAS,
Assistant Queen's Printer,

H. M. WILKISON,
Assistant Accountant,
Education Department.

Toronto, Nov. 5, 1886.

EDUCATION DEPARTMENT,
TORONTO, 13th Nov. 1886.

GENTLEMEN,—The attention of the Minister has been called to some sample copies of the Ontario Readers bound by your firm, and which had been placed on the market, showing evidences of carelessness on the part of your workmen in regard to folding, trimming, pasting and putting into the cases.

It is also complained that your binding of these books is much inferior to that of the other publishers, and that the mull used is not of sufficient strength for wire binding.

As the contract calls for "extra strong mull" and reads "that the whole binding shall be thoroughly done and be durable," I believe I have only to point out that your books fail to come up to the required test to ensure on your part the immediate use of a mull of greater strength and closer texture, and the exercise of greater care in the oversight of your workmen.

Please submit samples of a better mull for approval.

The Minister hopes to see the improved quality of cloth used for cases without delay.

Yours, &c.,

ALEX. MARLING,
Secretary.

W. J. GAGE & Co.,
Wellington St. West, City.

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54 FRONT STREET WEST,
TORONTO, Nov. 23rd, 1886.

Hon. GEO. W. ROSS,
Minister of Education.

DEAR SIR,—We have before us your favor of the 13th, *re* inferior binding of Ontario Readers. We regret that we cannot reply satisfactorily to the complaint made until we are furnished with more specific details as to the inferior workmanship complained of. In your letter you say that our binding is complained of as inferior to that of other publishers. In reply we need only say that our books are bound in the same way as those of the other publishers, and consequently, must be as strong.

The only specific complaint made with reference to our binding is that the mull is not of sufficient strength. Permit us in answer to furnish you specimens of the mull used by ourselves and that used by another publisher of the Ontario Readers. That marked *A* is our own, and that marked *B* that used by the other publisher. You will see, and we are sure that every practical bookbinder will at once agree with us, that the sample *A* is much stronger in texture, and is so made that the glue penetrates it. On the other hand, sample marked *B* is a lighter sample, and a much cheaper mull, and is so made that the glue will remain on the surface. Sample *B* can be purchased for fully 25 per cent. cheaper. Did we not consider the securing of the best results possible we would

is the ly use the cheaper article. The truth is, therefore, that if the strength of the mull publis test of the binding, our Readers are bound in much better form than those of any make her. We need scarcely add that if you prefer the lighter mull, we shall very gladly use of it in further lots.

You ask us to submit samples for approval. We, at present, know of nothing stronger and better than that which we are now using.

With reference to complaints made, we might say that the only complaints we know of are those that have been made to us and to others, by several dissatisfied workmen whom we had occasion to dismiss. These, with the assistance of Mr. D. J. O'Donohue and Mr. A. F. Jury, have been good enough to honor us with some attention. The mention of these names will be sufficient to show that complaints they have made are wholly unworthy of credence, and are only made with a view of furthering personal interests.

In conclusion, on this point, we beg leave to assure you that we have endeavored faithfully to carry out the terms of our agreement, not only in the use of the best material, but by keeping our bindery under the supervision of one of the most experienced men in the Province, whose position in charge of Government binding for many years should be sufficient proof of his skill and good workmanship.

May we here acknowledge the receipt of draft of agreement in the publication of text-books. We are hopeful that you would kindly favor us with an intimation that our application for permission to publish certain recently authorized text-books had been granted, and that we might at once proceed to arbitrate with a view to an early issue of the books referred to. If we mistake not you were kind enough to say that there was no reason why we should not at once proceed in this direction. May we, therefore, ask that arbitrators be appointed, so that the matter may be settled, and publication made before the opening of the schools. Awaiting the favor of your reply,

We have the honor to be, Sir,
Your obedient servants,

W. J. GAGE & CO.

EDUCATION DEPARTMENT,
TORONTO, January 7th, 1887.

GENTLEMEN,—In reply to your letter of 23rd Nov., a few samples (7) of the Ontario Readers, issued by your firm are transmitted by the Minister herewith, exhibiting defects such as were complained of in my letter of the 13th Nov. These samples are from a small stock in one store, but other booksellers can show defective Readers with your imprint as well.

The defects of each book are:

Book No. 1.—Carelessly put into case; irregularity of margin. Compare page 85 with page 297, and throughout the book.

Book No. 2.—Badly cased, and cases badly made, and too large for book; irregularity of margin. Compare pages 88, 89 with page 64.

Book No. 3.—Badly cased and cases too large; page 119 damaged.

Book No. 4.—Badly cased; page 119 damaged; pages uneven in color. Compare pages 62 and 67 with pages 166 and 167.

Book No. 5.—Leaves damaged; see pages 117 and 119; badly folded, and case too large for book.

Book No. 6.—Sewn with wire in *thirty-two* page sections, contrary to explicit agreement, that forms were not to be imposed so as to fold in thirty-two page sections, and that all those that had been so worked should be hand-sewed, or not sent out of bindery.

The unevenness of the pages throughout all the books is very objectionable, some pages very light, and others very dark, almost muddy.

Book No. 7.—Badly trimmed and put into case.

Please return these samples.

Your obedient servant,

ALEX. MARLING,
Secretary.

W. J. Gage & Co.,
Publishers, Toronto.

W. J. Gage & Co., Publishers,
54 Front Street West,
Toronto, January 13th, 1887.

Hon. G. W. Ross,
Minister of Education.

Dear Sir,—We beg to acknowledge the receipt of your favour of the 7th calling our attention to certain defects in the binding of copies of the Readers.

In reply, we would say that we can believe it quite possible that every book is not put in precisely the same form into a case, or that the margin is not exactly the same. Where there are between two and three hundred thousand copies of a book bound in a season it would not be remarkable if there were a few slight defects in so large an output. We are, however, scarcely prepared to believe that the books sent herewith have come from our own bindery, although they bear our own imprint.

In the first issue of the Ontario Readers, of which sample sent herewith forms a part, we were compelled to send out a portion of the edition to several binderies. Although our contract with these binders called for a strict fulfilment of the terms of our agreement with the Department, we were unable to secure as good results as that from our bindery. Every book delivered from our own bindery is examined by a thoroughly reliable and competent overseer. Any that are found not up to standard are immediately turned aside to be rebound. We, however, hold ourselves responsible for the proper binding of all books bearing our imprint, and as we will be able to do this work in future in our own establishment we believe that the work will be done as well as it is possible to do.

You call our attention to one important matter, namely, "That book No. 6 is sewn with wire in 32 page sections, contrary to explicit agreement that forms were not to be imposed so as to fold in 32 page sections, and that all those that had been so printed were to be hand-sewed or not sent out of bindery." In reply, permit us to say that there was a clear and distinct arrangement made with Mr. Thomas, the Queen's Printer, that the *books already sewn*, printed in 32 page sections, could be completed and sent out. These were received from our bindery and no others.

Before closing this letter, permit us to remind you of the intimation which we had the honour of receiving from you, that you were prepared to give us permission to go on publishing the Canadian Drawing Books. We are ready to proceed at once if you will kindly indicate that arbitrators will be appointed to determine the conditions of publication.

Awaiting the favour of a reply,

We have the honour to be, Sir,
Your obedient servants,

W. J. GAGE & CO.

PACKER'S METHOD.

TORONTO, ONT., 6th October, 1886.

Hon. G. W. Ross,
Minister of Education.

SIR,—I have the honour to bring to your notice the Rational Method of Teaching Reading, with the hope that it may commend itself to your judgment and that you will give it a good recommendation.

Please let me know as soon as you can conveniently whether or not this hope is in any degree realized, and you will greatly oblige your most humble servant,

THOMAS PACKER.

Address :—
THOS. PACKER, Jr.,
24 Division Street, Kingston.

TORONTO, 13th October, 1886.

DEAR SIR,—I have read with pleasure your little pamphlet on the "Rational Method of Teaching Reading." You have given therein some valuable hints and suggestions which teachers might act upon with great benefit. I cannot, however, give you any recommendation of which you would be at liberty to make public use, as this is contrary to the policy of the Department. I hope, however, you will find a sufficient number of teachers who are willing to purchase the book to make its publication profitable.

Yours truly,

GEO. W. ROSS.

THOMAS PACKER, Jr., Esq.,
24 Division Street, Kingston.

LEGISLATIVE LIBRARY, December 20th, 1886.

Hon. G. W. Ross, M.P.P.

DEAR SIR,—In reply to your request for information as to my connection with Gage's series of Canadian Readers, I have to state that Chambers' series, which formed the basis of Gage's, was edited in the first place by Mr. J. L. Hughes, who adapted for use in Canadian schools all the books in the series up to and including the fifth. I revised the books for a subsequent edition—the one submitted to the late Hon. Adam Crooks for authorization in connection with the public schools of Ontario. My work was spread over all the books, up to and including the Fourth Reader, but I had nothing to do with procuring the lesson by Archbishop Lynch on Niagara Falls. I have always understood that Mr. Hughes procured by a personal interview the Archbishop's consent to prepare that lesson.

Yours truly,

WM. HOUSTON.

TORONTO, 17th September, 1887.

MY DEAR MR. EMBREE,—I desire to avail myself of your services in the preparation of annotations for the High School Reader. I think all the annotations required can be put within the space of sixty pages at the outside. Could you undertake this work for me, and on what terms?

The whole thing should be completed and published before the first day of February, 1888.

Yours truly,

GEO. W. ROSS.

L. E. EMBREE, Esq., M.A.,
Whitby.

WHITBY, September 22nd, 1887.

DEAR MR. ROSS,—In reply to yours of the 17th I am willing to undertake the work of annotating the High School Reader, and to begin at once if you see fit to give me the commission. As to remuneration, Hunter, Rose & Co., when the book was issued, offered me $500 for annotations upon it, which I would not accept.

In sixty pages, it is true, one could not do much more than give a few simple lessons and explain words and passages here and there. Yet as all the lessons of the book should be critically examined for the purpose of selecting the most difficult and most important features of each for annotation I think the work should be worth $450 or $500. Sixty pages of notes on a 60-page book could be much more easily done. If I undertake the work I shall, in many cases, not trust to my own judgment merely, but shall, if possible, get the opinion of others as to passages to be annotated, and the form of the annotations.

Yours faithfully,

L. E. EMBREE.

Hon. G. W. Ross,
Toronto.

TORONTO, 24th September, 1887.

MY DEAR SIR,—I saw one of the publishers of the High School Reader this morning and found him unwilling to agree to pay more than $300 for the annotations we require covering sixty-four pages, that is, four forms. As I must depend on the publishers for carrying out my scheme I must also accept their terms as to cost. I hope you will consider this sufficient and at once begin work.

Yours truly,

GEO. W. ROSS.

L. E. EMBREE, M.A., Esq.,
Whitby.

WHITBY, September 28th, 1887.

DEAR MR. ROSS,—While I am convinced from experience that the sum stated by me in my last letter is not too much for the amount of work required, the publishers to the contrary notwithstanding, I am willing to accept the $300 offered, and shall at once begin work.

Yours sincerely,

L. E. EMBREE.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 2nd November, 1887.

MY DEAR SIR,—The publishers of the "High School Reader" have made application for copy, as they are anxious to get the new edition ready for the December trade.

Could you send an instalment at once, in order that there might be no delay?

Yours truly,

G. W. ROSS.

L. E. EMBREE, Esq.,
Whitby.

WHITBY, November 4th, 1887.

DEAR MR. ROSS,—Yours of the 2nd to hand respecting copy of Notes to H. S. Reader.

I am surprised that the publishers should want copy so soon, for your letter of the 17th September mentions February 1st as the date when the annotations should be completed, and it will require that time to have them properly done. I want to have them well advanced before any copy is furnished, so that I can tell just how much annotation I can do, and when it should be done most fully.

I know what publishers are; when you once begin to furnish copy then they expect it as regularly as if one were sawing wood. Having been driven for two winters by publishers, I have no desire to have further experience of the same kind just now; so if copy is required to get the new edition ready for the December trade I cannot furnish such copy.

Yours faithfully,

L. E. EMBREE.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 12th January, 1888.

MY DEAR SIR,—Send at your earliest convenience so much of your Notes for the High School Reader as you have ready.

The printer is anxious to get at work.

Yours truly,

GEO. W. ROSS.

L. E. EMBREE, M.A., Esq.,
Whitby.

WHITBY, January 17th, 1888.

DEAR MR. ROSS,—The work I have done on the Notes for the H. S. Reader is all in the rough and on lessons scattered through the book—the lessons I intend to annotate fully. I wish to have these lessons annotated first and then fill up the 60 pages with notes on the other lessons, and have the fully annotated lessons placed in their proper order in the Notes. I cannot have this work completed before Easter, and if the printer insists upon having the Notes before I cannot undertake to do them. It will not take the printer long to run off 60 pages, but it takes about as long a time to prepare these pages as to prepare twice as many, for the same ground must be gone over. Trusting this will prove satisfactory,

I am, etc.,

L. E. EMBREE.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 19th January, 1888.

MY DEAR SIR,—I am afraid your frequent postponements of the annotations will embarrass us somewhat. If I could depend upon them being ready absolutely at Easter it would do. I thought they would have been ready by this time. Work on the autumn edition of our text-book is generally begun in May.

Send your copy in good shape by Easter and we can manage to get along.

Yours truly,

GEO. W. ROSS.

L. E. EMBREE, M.A., Esq.,
Whitby.

ARITHMETIC.

OTTAWA, May 4th, 1886.

DEAR SIR,—I have been working hard at the Arithmetic, but a hitch has occurred. Beatty insists that the book shall not contain more than 180 pages of text and examples, or more than 192 pages all told; but I have already some 220 pages set up or in MS., and it will take about 30 more to finish the book, making 250 in all. Out of this I may be able to save some 10 or 12 pages by cutting out 3 pages of mechanical problems at the beginning and the 7 or 8 pages of text in the chapter on Reduction and the Compound Rules.

The truth of the matter is that I have been trying to cover the whole course of Arithmetic and Mensuration for our Public Schools, and also to add many practical problems on the application of arithmetic, such as I have not found in any other school text-book. I have, at the same time, an extremely full and varied, in fact, an almost exhaustive collection of examples arranged with preliminary problems leading up step by step to the general and difficult cases. The consequence of this is, that, although in the early chapters I give less text than any arithmetic (other than mere collections of examples) I know of, I give far more exercises than any of them.

Our present Elementary Arithmetics have to be supplemented in the lower classes by extra problems given by the teacher,—all right if the teacher can and will give them of sufficient variety and proper grading—and in the higher classes by some advanced arithmetic. I propose to make my work such that this will not be needed, and to begin the advanced book at the point where the elementary work ends. Hamblin Smith starts at Notation and Numeration; I propose to make the advanced book begin at, say, Compound Interest. After completing the advanced rules, a chapter may be added on short methods of calculation, and another for the use of students for teacher's certificates on the theory of arithmetic. You see that I propose that the two books shall dovetail into each other and be merely the two parts of one complete work on arithmetic.

I have proposed to Beatty that he should set up the book as I write it, and that when finished it should be submitted to you to declare whether acceptable or not, and if acceptable what parts, if any, are to be rejected; all elisions of parts and omissions of subjects to be decided upon, not by him or by me, but by you.

Another point to be considered is, if a pupil in the simple rules buys an arithmetic, will the book last him till he is through the subject? if not, should he pay for the parts on, say, Interest? When he comes to Interest should he again buy the parts on the simple rules?

Yours, etc., etc.,

J. C. GLASHAN.

OTTAWA, 6th May, 1886.

DEAR SIR,—I was sorry to have to talk *business* with you yesterday, it seemed like spoiling your visit and besides I had a number of other matters I wanted to speak to you about, especially your approaching visit to England. The consequence of this was that I felt bothered and hurried at the time we were talking, and was not able properly to discuss the subject we did speak upon, will you excuse me therefore if I now return to it for a short time.

I take it for granted as settled that if there is to be a new Elementary Arithmetic, 1st, the book must cover the whole Public School course in Arithmetic; and 2nd, it must sell for 25 cents retail. The latter condition limits the size of the book to 192 pages all told. Deducting 6 pages for title-page, preface, contents and Addition and Multiplication Tables and ten pages for answers, there will be left just 176 pages for text and problems. The question arises, how can the first of the above conditions be complied with in this space? You indicated a large number of pages in the early part of the book, that may be struck out, but when I consider all that is still to come I find that even the "heroic treatment" you propose will not be enough. What else then can? Suppose for the present we keep Chapter IV. intact although if need be a whole section may yet have to go, and it must go in sections. Let us examine Chapter V. The subject of this chapter is factors, measures and multiples. To tell the truth I would like to have treated this subject as Professor Newcomb has treated it in his University Algebra—*i. e.* I would like to have left it out. But I could not well do this for L. C. M. is needed for easy work in addition and subtraction of fractions. Now, thanks to Hamblin Smith and his followers, Kirkland and Scott, I had either to leave out G.C.M. or make my treatment of it thorough. Kirkland and Scott following Smith confuse factors and measures.

Is there then any part that can be cut out of measures and multiples? There is. The G. C. M. of very large numbers is seldom required in actual practice, hence strike out the "Second Method" and with it as a consequence must go the "Second Method" of finding L. C. M. With these strike out *all* the *problems* in G. C. M. and L. C. M. This will save ten pages in all, viz., pp. 155 to 159 and pp. 164 to 168. (I have asked Beatty to send you a copy of the work as far as it is in type). The next chapter takes up Fractions. Kirkland and Scott gives twenty-eight pages to their chapter on Fractions, and the corresponding part of mine occupies exactly the same number, but I have in addition prepared a very full and varied series of problems covering the whole ground of applied elementary fractional calculations. I shall have to strike out about four-fifths of them. By this means *if the thing can be done at all* we should get our book down to the required limit, and shall say something on each subject of the Public School course. "But," you will say, "Kirkland and Scott have got the course within the prescribed number of pages, and that, too, although they give to the Simple Rules half as many pages again as you now propose to give." Let us see how they have got over the course, and perhaps you will see why our better class of teachers have to supplement Kirkland and Scott with Hamblin Smith. Kirkland and Scott give one exercise and only one exclusive of the oral exercises on reduction of denominate numbers. Here it is, "oral exercise" and all.

ORAL EXERCISES.

Repeat time measure.
How many days in 3 weeks? in 5 weeks and 3 days?
How many dozen in 84? in 132? in 150?
Was 1600 a leap year? 1876? 1854?
How many hours in 360 minutes? in 788 minutes? in 600 minutes?

EXERCISE LXXXIV.

1. Reduce 7 days 16 hours to seconds.
2. " 7684 pints to bushels, etc.
3. " 84 gallons 3 gills to gills.
4. " 36 bushels 3 quarts 1 pint to pints.
5. " 2685 gills to gallons.
6. " 17 grains 3 bushels to pecks.
7. " 3685 lbs. wheat to bushels.
8. " 785693 seconds to weeks, etc.
9. " 3856 lbs. timothy seed to bushels, etc.
10. " 78 days 9 minutes 2 seconds to seconds.
11. " 1576 cubic feet to cords.

They give only one exercise in Compound Addition. Here it is,

EXERCISE LXXXV.

(1)

lbs.	*oz.*	*dwt.*
17	9	16
25	6	12
72	11	13
57	10	19

(2)

cwt.	*qr.*	*lbs.*	*oz.*
20	3	12	11
16	2	16	12
17	0	22	15
19	1	18	13

(3)

rd.	*yd.*	*ft.*	*in.*
17	4	2	6
21	2	1	7
23	3	0	8
25	5	2	9

(4)

£.	*s.*	*d.*
5	5	5
8	1	$7\frac{3}{4}$
2	0	$1\frac{1}{2}$
13	0	$11\frac{3}{4}$
6	6	6

(5)

bu.	*pk.*	*qt.*	*pt.*
10	1	1	1
2	3	6	0
5	2	3	1
8	3	1	1
15	2	4	0

(6)

rd.	*yd.*	*ft.*	*in.*
37	4	1	9
30	5	2	2
	3	2	7
1	0	2	10
25	1	1	11

(7.) Find the sum of 1 week 2 days 13 hours 40 minutes 30 seconds ; 2 weeks 6 days 10 hours 8 minutes 3 seconds ; 5 days 22 hours 55 minutes 45 seconds ; 4 hours 1 minute 15 seconds ; and 1 week 2 days 4 hours 5 minutes.

(8.) Add together 10 rod 4 yards 2 foot 8 inches ; 1 rod 3 yards 5 inches ; 8 rod 2 yards 1 foot 6 inches ; 1 rod 4 inches ; and 2 yards 1 foot 9 inches.

They give ten pages all told to averages and percentages. (Why averages should be mixed with percentages might well puzzle any one.) Now of all commercial subjects surely after Bills and Accounts and Interest, the next of importance is Discount. What do Kirkland and Scott do on discount. They give a page and a half to discuss what following the run of school books, they call present worth and true discount. Now, discount in all commercial transactions has one and but one meaning—25 per cent. *discount* means 25 off the 100 or 25 cents off the dollar when applied to money, and that whether prices, accounts or notes of hand are spoken of. But "True Discount" as the school books call it would take 25 per cent. *discount* to mean 25 per cent. off the 125, or applied to money 20 cents off the dollar. Try to find a business man that gives it that meaning, that will accept 20 cents off the dollar for 25 per cent. discount. Now this is the meaning as applied to notes of hand given by Kirkland and Scott,(they do not speak of any other subjects of discount) and as their present worth is based on this meaning it is not worth the paper it is printed on. Having given a page and a half to wrong explanation, an example

of a wrong method of calculation and exercises worked incorrectly, they proceed to the important subject of "Bank Discount," which is the only discount as applied to notes known in commerce and in law. Here is the whole they give, and a beggarly whole it is. Discount or Interest in the exercise is rather neat. And *two* problems and such problems ! No forms for notes, drafts or cheques, no specimens of these. No example of a bank discount sheet ? Is it any wonder that of all educated people amongst us, teachers are said to know the least about business and business rules. The following is copy of paragraph 184, Kirkland and Scott's Arithmetic.

184. The discount found in exercise 3 is called True Discount. There is another kind of discount called *Bankers' Discount* or *Bank Discount.*

The difference between the two kinds of discount is this—the *true discount* is the interest of the present value of the bill while the *bankers' discount* is the interest of the amount of the bill itself not only for the specified time, but for three days additional, called days of grace. The bankers' discount is thus always in excess of the true discount.

Exercise 4. What is the discount and present worth of a note of $584.00 drawn January 8th at 11 months, discounted at the Bank May 10th at 5 per cent.

11 months from January 8th=December 8th,
which with three days of grace=December 11th.

From May 10th to December 11th is 215 days. Discount or Interest of $584.00 for 215 days at 5 per cent.=$17.20, which *with* principal $584.00=present worth=$566.80.

10. What is the bank discount on a note for $730.00 for 30 days at 6 per cent.

11. Suppose a bill for $1200.00 is drawn on the 12th of August at six months, and paid by a banker on the 1st of January, find the money he takes off at 7 per cent.

I have had twice cast in my teeth in a bank in this city, "Your teachers don't even know how or where to endorse a cheque." This is the way Kirkland and Scott cover the "Public School Course in Arithmetic." Now I want if possible to offer you something better than this, something that will stand examination. In discount I would like find space for specimens, notes and for a copy of a discount sheet in actual use in one of our banks, adding explanation of the terms used and the rules for filling up.

By such a vigorous pruning of my Elementary Arithmetic I shall necessarily omit many of my best problems, in some cases even whole classes of them. I mentioned to you that I had received proposals to issue in the United States an adaptation of my work, and the continuation of it forming an advanced text-book. This second part was to begin where the elementary part ended and to complete the subjects of ordinary arithmetic and mensuration. After this was to come a chapter on Short Methods of Calculation and the book was to close with a chapter on "The Theory of Arithmetical Operations." This second part I estimated would contain from 160 to 200 pages. I now propose to remove the chapter on Short Methods to the beginning of the book, and to add to it the best of the rejected problems and to combine with them my collection on Fractions. This chapter will thus serve as a place of review and regrounding in the subject for pupils passing from one book to the other. The result will be to increase the book to somewhere in the neighborhood of 280 pages.

Have you any objections to my arranging for a Canadian edition. If you have not, would there be any chance of authorization *should the book prove satisfactory in every respect ?* I need scarcely add that your answer will be considered strictly private and confidential, and in no respect, should it be favorable, to commit you to so much as an examination of the work should you in the meantime decide to consider any other work. The outside price of this part would be 50 cents *i. e.*, 25 cents less than the price of Hamblin Smith's Arithmetic, and it would cover Mensuration as well as Arithmetic, thus doing away with the necessity of a text-book on that subject. True, there is at present, no text-book on Mensuration, but it is a subject of examination and I have been spoken to time and again to prepare a book on the subject. This will be killing two birds with one stone. I can give them some good things from German works on Mensuration, but shall aim to be practical.

I have requested Beatty to send you plate-proofs of Elementary Arithmetic. Would you mind looking them over and marking the pages you think had best be rejected and sending the result to me, *to be kept strictly in my own hands.* I have gone over the sheets we were looking at and I think I can cut out some 64 pages if need be, but I would prefer that you should give the final decision as to the particular pages. If required I can send you my marking.

I hope you will forgive me for occupying your time and attention with so long a letter on a subject that is chiefly of importance to myself, but I thought a full explanation would be the best and I want to meet your views *if it is in me.*

Yours respectfully,

J. C. GLASHAN.

Hon. G. W. Ross,
Minister of Education,
Toronto.

Ottawa, 19th May, 1886.

Dear Sir,—It is absolutely necessary that the school editions of the arithmetic should contain the answers to the problems in it. These answers will occupy from twelve to sixteen pages, or perhaps even more, and these can ill be spared, for I find that the rule, "a new subject a new page," sometimes demands a good deal of extra space, and there was too little already. Now, many teachers object to the answers being on the pupils' book, so here is a chance for economy. I propose to cut out pp. 155 to 159 both inclusive, and pages 164 to 168 both inclusive. This will take out the second methods in G. C. M. and L. C. M., and all the problems on these subjects. They may very well go into Part II.

Yours respectfully,

J. C. GLASHAN.

Ottawa, 10th November, 1886.

Dear Sir,—I have sent you a copy of the "Public School Arithmetic," in two parts, with 56 pages marked. These pages I would suggest to be those selected to be cut out, and if necessary pages 23, 31. 108, and 114 might also be omitted, making 60 pages in all. However, if you do not require the Answers to be bound up with the text, only 40 or 42 pages need be cut out. Would you please look over the book and mark in red whichever of my selections you approve of, and other parts or pages you wish cut out, and return the book to me.

There is still to be added a chapter of some 14 pages treating of percentage and its simpler applications. This is much more space than either Smith and McMurchy or Kirkland and Scott gave to this subject, but when you see the chapter and how practical it is, I believe you will think the space not wasted. In fact I suspect you will want the chapter lengthened by another section to treat of taxes, which I have very reluctantly omitted. This closing chapter has been in the printer's hands for a fortnight, but he does not wish to go on with it, he says, until he knows about the paging to precede it.

A good deal of the matter cut out I can use as introductory exercises in an advanced arithmetic, although the text of that work should begin where the Elementary Arithmetic ends: making the two merely parts of one complete and continuous work. There is this to be said for it, however, the advanced arithmetic might well begin with a short chapter giving the short methods of calculation adopted by professional computers, such as the men employed in observatories to reduce observations, and the calculations on geodetical surveys. For example, subtraction and long division are never used by these.

Yours respectfully,

J. C. GLASHAN.

Hon. G. W. Ross,
Minister of Education, Toronto.

OTTAWA, 15th November, 1886.

DEAR SIR,—Mr. Beatty writes me that you wish to see me on Monday, the 22nd inst., about the elisions to be made from the arithmetic.

I shall therefore go up to Toronto on Saturday next, stop at the Queen's on Sunday and Monday, and call on you on the latter day, if this arrangement will suit you.

Yours respectfully,

J. C. GLASHAN.

Hon. G. W. Ross,
Minister of Education, Toronto.

TORONTO, 1st March, 1887.

MY DEAR SIR,—If I remember aright there are two or three omissions in your new arithmetic which I think had better be supplied by way of appendix, notably the omission of Apothecaries Weight and Troy Weight, but don't you think several of the weights and measures which are not in common use, but which are recognised in the o arithmetic, might also be inserted in a brief appendix? It would supply some of the pupils with information they might require, and it would disarm criticism.

I hope you will see your way to entertain this favourably. It would preserve the symmetry of the work, and would not interfere with the stereotype already completed.

Yours truly,

GEO. W. ROSS.

JOHN C. GLASHAN, Esq.,
Inspector of Public Schools, Ottawa.

TORONTO, 3rd September, 1887.

MY DEAR MR. GLASHAN,—It is quite evident that a High School arithmetic will be required, and I am anxious that it should be ready before the 1st September, 1888. Having prepared the Public School Arithmetic, you are in a better position than anybody else to develop the subject in the higher departments in the order most consistent with the Elementary Arithmetic. In the preparation of such a work I have conceived the following plan: (1) To appoint you editor, securing to you a royalty of 5 per cent. on the book; (2) to procure for you some assistance from the best mathematical teachers in our High Schools, at a remuneration to be agreed upon with the Department.

I do not know whether you would like such a partnership or not, or whether you are under obligations to any firm which would prevent you placing your service at my disposal, but I would like to accept some offers that have been made me in connection with the preparation of such a work, and I would feel much more confident in regard to its success, if you took the editorial responsibility. I hope you will allow no ordinary obstacle to stand in the way.

Yours truly,

GEO. W. ROSS.

J. C. GLASHAN, Esq.,
Ottawa.

OTTAWA, 5th September, 1887.

Hon. G. W. Ross,
Minister of Education, Toronto.

DEAR SIR,—I think your proposed plan of preparing an advanced arithmetic excellent, provided the editing be done judiciously. At the same time, if the book is not to present any appearance of patchwork, the editor would find that it would be a much easier task to write the whole of the text himself. But even were he to adopt this, the easier mode of doing the work, the advice and suggestions of his collaborators would still be very valuable, while on the other hand his correspondence and discussions with them would prepare them to adopt the views, and the methods of solution presented in the book, and the acknowledgment by name of their assistance would secure their goodwill (pecuniary acknowledgment having first won it.)

As to undertaking the editorial management myself, I would very willingly do so, but there is a difficulty in my way. About fifteen months ago I promised Mr. S. G. Beatty to write for the Canada Publishing Company an advanced arithmetic in continuation of their elementary book. If you can overcome this difficulty perhaps the best thing I could do would be to take advantage of one of the cheap excursions and run up to Toronto and talk the matter over with you. I could go up on Friday night next if that would suit you.

Yours respectfully,

J. C. GLASHAN.

TORONTO, 23rd September, 1887.

SIR,—We take the liberty of soliciting your consideration when arranging for the publication of future books for use in the schools of the Province of Ontario, along with the other publishers to whom you have been extending similar work during the past two years.

We base our claim upon the fact that, as wholesale dealers in the Provincial school book, our trade in them is as voluminous in extent as that of any of the wholesale trade of Canada, and while the margin of profit obtained by us simply as jobbers is of a questionably close character *all of our competitors publish one or more of the authorized text-books*, which, in a measure, renders this branch of their trade reasonably profitable.

Our main object in communicating with you at present is the knowledge that you intend authorizing at no very distant date a "NEW HIGH SCHOOL ARITHMETIC," and we respectfully request that in connection with it, or any other text-book you purpose authorizing you will view our request for recognition as publishers favorably.

We have the honor, etc.,

C. M. TAYLOR & CO.

Hon. G. W. Ross, M.P.P.,
Minister of Education.

TORONTO, 26th Sept., 1887.

DEAR SIR,—I am directed by the Minister of Education to acknowledge the receipt of your communication of the 23rd instant, and to state that the subject is under his consideration.

Your obedient servant,

ALEX. MARLING,
Secretary.

To Messrs. C. M. TAYLOR & Co.,
Publishers, Toronto.

COPYRIGHT.

CANADA PUBLISHING CO.,
TORONTO, January 12th, 1888.

SIR,—In reference to our conversation of yesterday I beg to ask :

1. Have the copyrights of "Kirkland & Scott's Arithmetic" and "Hamblin Smith's Arithmetic" been surrendered to the Education Department?

2. Are you now in a position to grant our Company the right to publish these books, subject to the terms to be settled by the Arbitration Clause of the usual form of agreement?

If, as we understood heretofore, Messrs. Gage & Co. have only surrendered the copyrights of a couple of minor books of very limited sale, and are allowed to hold the Arithmetics alluded to *exclusively* under copyright protection, we respectfully submit that it would be very unjust discrimination against us to grant the said firm the right to publish *any* of our best-selling books they might select, the copyrights of which we entrusted to you in good faith, until such time as you are able to offer us the same privilege in regard to *any* of their books on your authorized list.

Your obedient servant,

SAMUEL G. BEATTY,
For the Canada Publishing Co. (Limited).

Hon. G. W. Ross,
Minister of Education.

TORONTO, 13th January, 1888.

MY DEAR SIR,—I thought you clearly understood that copyrights were only required of books which I had authorized myself, or books formerly authorized which were completely revised by my authority. I have applied this principle to all the publishers—to the books held by your Company, as well as by Mr. Gage. For instance, you are publishers of Campbell's Geography, Edith Thompson's History of England, Jeffers' History of Canada, and I think one or two other books, the copyright of which you have not surrendered.

Hamblin Smith's Arithmetic will be superseded by the "High School Arithmetic," which is now under way, and which will be published next autumn, the copyright of which I intend to hold. I purpose applying the same rule strictly to all publishers.

Yours truly,

G. W. ROSS.

SAMUEL J. BEATTY, Esq.,
Manager Canada Publishing Co., Toronto.

OFFICE OF CANADA PUBLISHING CO. (LIMITED),
26 FRONT STREET, TORONTO, Jan. 16th, 1888.

SIR,—In replying to yours of the 14th inst. (?) we beg to state that we had no intimation of any kind given us that "Copyrights were only required of books which you authorized yourself, or books formerly authorized which were completely revised by your authority, and, as shown by reference hereafter to Campbell's Geography, and Edith Thompson's "History of England," both of which were authorized long before your acceptance of office, and neither of which has since been revised; this principle has not been applied in our case.

You informed the writer distinctly, before we surrendered the copyrights of our publications that "no book would be allowed to remain on the authorized list unless the copyright was surrendered to the Education Department." In the case of Public School books there was no question as to time of surrender, and, as agreements with you show, the copyrights of our High School books are virtually in your hands, as they must be assigned as soon as you "secure the copyrights of such text books authorized for High Schools as are printed and published in Canada, or withdraw the authorization from such text book."

You have therefore, required of us through said agreement the copyrights of *all* our books on the authorized list.

Campbell's Geography and Edith Thompson's History of England, which you allude to as an illustration, were not authorized by you, nor revised by your authority, but are under this agreement, and we are thereby obliged to surrender to you the copyrights of them at any time you are ready to call upon us to do so.

If, therefore, as you say the principle enunciated in your communication has been applied to all publishers alike, it must have been applied in the case of the books referred to in our communication of the 12th inst. We would, therefore, again ask:

1. Have the copyrights of either Kirkland and Scott's Arithmetic, or Hamblin Smith's Arithmetic been surrendered to the Education Department, or is both or either of them made subject to the agreement above referred to, which only defers surrender till you secure the copyrights of such other text-books authorized for High Schools as are printed in Canada?

2. Are you in a position to grant us the right to publish both, or either of these books, subject to our compliance with the Arbitration Clause of the usual Form of Agreement?

3. Is there any other book on the Authorized List for Public Schools, besides Kirkland and Scott's Arithmetic, the copyright of which has not been surrendered to the Education Department, or any book on the High School list that is not subject to the agreement we have entered into respecting *all* our High School books?

Your obedient servants,

For the CANADA PUBLISHING CO. (LIMITED).
S. G. B.

Hon. G. W. Ross,
Minister of Education, City.

Toronto, 23rd Jan., 1888.

Sir,—We beg to ask you once more to have the kindness to answer our inquiries respecting Kirkland and Scott's Arithmetic, Hamblin Smith's Arithmetic, and other school books now on the authorized list, as set forth in our communication of the 12th and 16th instants.

Yours, etc.,

For the CANADA PUBLISHING CO. (LIMITED).

Hon. G. W. Ross,
Minister of Education.

Toronto, 27 January, 1888.

Dear Sir,—In reply to your letter of the 16th instant, on enquiry I find that we do not hold the copyrights of "Campbell's Geography" or "Edith Thompson's History." I am right, therefore, in the remark made in my letter of the 13th instant respecting the principle applied to copyrights. What is the object in raising the question as to the

surrender of the copyrights of "Kirkland and Scott's Arithmetic for Public Schools" and "Hamblin Smith's Arithmetic for High Schools"? They are both on the italicized list and will naturally cease to be used within a few years, whereas "Campbell's Geography" and "Edith Thompson's History" are retained permanently. Do you not see, therefore, that there is no ground for your contention? You surely do not expect that the mere fact of Gage's holding two unimportant books that are being discarded should stand in the way of an arbitration affecting books for which there is a large sale, and which are being generally adopted. Justice to publishers requires such a distribution of the work of publication as the agreement calls for.

Yours truly,

G. W. ROSS.

SAMUEL G. BEATTY, Esq.,
Manager Canada Publishing Company,
Toronto.

OFFICE OF THE CANADA PUBLISHING COMPANY (LIMITED),
26 FRONT STREET, TORONTO, 31st January, 1888.

SIR,—In replying to yours of the 27th inst. we most respectfully beg to remind you that you have not given us the information asked in our letter of the 12th, repeated in that of the 16th inst., and as you seem to misunderstand our points of contention we will endeavour to place the matter before you in such shape as to prevent misconception.

Our contention is simply and briefly this :—That no publisher should be permitted to publish the books of any other publisher unless both such publishers are subject to the same conditions as regards copyright. In other words, unless no discrimination is made by the Education Department.

Now, we hold that in the matter of right this company has been discriminated against, and this we proceed to show.

Before signing an agreement for the surrender of any of our copyrights the manager of our company was specially delegated by the board of directors to wait upon you, personally, and to ascertain definitely the policy of your Government in regard to holding the copyrights of authorized text-books. He asked :—

1. Whether or not every book on the authorized list must be surrendered.

2. Whether, if we surrendered all our copyrights and placed it in the power of others to select and republish (subject to arbitration) any of our books on said list, we should have the privilege of selecting and republishing any other book or books sanctioned for use in the schools.

You answered (1) that the copyright of every book on the authorized list must be surrendered to your Department, and (2) that every person owning a copyright thus surrendered would have the right to select and republish any other book on the authorized list. Thus upholding, as it were, the principle for which we contend, namely, that all publishers of authorized text-books should be bound by the same conditions.

We may here say that (as you must know from the long negotiations with our manager on this subject) we never would have surrendered our copyrights under any other understanding, for as we anticipated, and as we explained to you at the time of those negotiations, we might otherwise be unjustly discriminated against by such firms as refused to surrender their copyrights.

It seems now, however, that a change has been made in this policy, or, rather, that in order to meet the refusal of a publisher to surrender certain copyrights, the originally definitely stated policy of justice has been abandoned and a policy of expediency has been adopted in its stead, namely, that "Copyrights are only required of books which you had authorized, or books formerly authorized which were completely revised by your authority."

Permit us to point out to you that no intimation of any possible change of policy was hinted to us, until the receipt of your letter of the 13th instant. We surrendered our copyrights in the belief that the understanding would be honourably carried out. It is surely late in the day, after the surrender of all our copyrights, to change the definite policy (under which such surrender was made) into a mere expediency that allows a publisher who holds exclusively valuable copyrights of text-books on your authorized list to select and republish the best selling books of other publishers.

This treatment, we make bold to say, can only be characterized as a flagrant outrage upon publishers who placed their copyrights in good faith in the custody of your Department. It is a discrimination against us wholly in disaccord with the original agreement entered into at the time of our negotiations with you in the person of our manager. In reference to your contention that "Kirkland and Scott's Arithmetic is on the italicised list and will naturally cease to be used within a few years," we respectfully submit that this has nothing to do with the matter. The original understanding between the Education Department and the publishers who surrendered authorized text-books, as interpreted by you to us, is the only just ground of argument.

We might say, however, that placing books on the italicised list merely means, according to your latest regulations, that such books "shall continue to be used in such schools only as have adopted the same on or before the 30th of June" (1887). As this book has been used almost exclusively throughout Ontario for the past ten years, the italicising (which only prevents its introduction into newly-organized schools) will affect it little, if at all, and is no plea for its exclusive protection in the hands of its publishers.

In fact, your reconsidered policy, as enunciated, is doubly unjust, as the publishers of such books as Kirkland and Scott's Arithmetic and Hamblin Smith's Arithmetic have reaped the profits of exclusive publication for many years, whereas recently published books are surrendered before the first cost of production and introduction are realized.

Again, you say "we are allowed to *hold* the copyrights of Campbell's Geography and Edith Thompson's history, which are *retained permanently*" on the authorized list. Then what is the meaning of the clause (No. 23) in the written agreement entered into with you for the surrender of the High School books, which reads:—"The said publishers for themselves, their successors and assigns covenant and agree that when the Minister of Education secures the copyright of such other text-books authorized for High Schools as are printed and published in Canada . . . then the said publishers shall, if requested in writing, transfer and assign to the said Minister of Education the copyrights of said books."

If, as stated in your letters of the 13th and 27th, we "are allowed to retain the copyrights" of the two above mentioned books which are "*retained permanently*" on the authorized list, how are you ever to obtain the assignment of copyrights of any High School books? The clauses quoted from your letters, and the 23rd clause of agreement respecting High School books, as you will see, contradict one another."

In conclusion, we would say that we have no objections to publishers with no books on the authorized list, or owners of books on said list who accord us the same privilege, being granted the right to arbitrate for the republication of any of our books, but we contend that until all publishers of authorized text-books are placed on the same footing it would be manifestly unjust to allow a publisher, who is the owner of the copyright of a book or books on said list which no other firm can publish, to be permitted to republish the books of firms who have entrusted their copyrights to the Education Department in good faith, and in the belief that the understanding under which they surrendered their copyrights would be honourably carried out.

Your obedient servants,

For the CANADA PUBLISHING CO. (LIMITED),
S. G. B.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 25th Feb., 1888.

GENTLEMEN,—You will observe, I trust, that the agreement made with this Department refers to two classes of books, (1) those authorized for Public Schools, and (2) those authorized for High Schools and Collegiate Institutes. Under the agreement referring to Public School Text Books the copyright is surrendered absolutely, while in regard to the agreement respecting High School Text Books the surrender is conditional. I have no recollection that the agreement for the surrender of the copyright of Public School Text Books by any publisher involved any other consideration than that stated on the face of the agreement itself, namely, that the surrender was absolute. I do not remember, however, that in the case of High School Text Books I promised such an agreement as would protect the publisher in the way you mention; that promise I fulfilled by the insertion of clause 23. I have moreover allowed in consideration of the expense of publication, the publishers of Public School Text Books the exclusive right of publication for one year. This might fairly be considered a reasonable offset to the exclusive right which any other publisher has of any book, particularly when every other book on the Public School list of which the copyright is not held by this Department is permitted to remain on the authorized list only conditionally.

I am sorry that this misunderstanding has arisen as to my intentions in the matter of copyright, particularly as you express yourselves so willing to enter upon an arbitration with publishers who have surrendered all their copyrights. Indeed, were it not that the copyrights now held by other publishers of Public School books are practically of little value, I would be inclined to insist upon their absolute surrender before consenting to an arbitration in regard to books which are held by other publishers who have surrendered all their copyrights.

Yours truly,

G. W. ROSS.

THE CANADA PUBLISHING CO.
Toronto.

OFFICE OF THE CANADA PUBLISHING CO. (LIMITED),

TORONTO, February 28th, 1888.

SIR,—We are quite aware that agreements under which copyrights of authorized text-books were surrendered to your Department are of the two classes mentioned in yours of the 26th inst., and asked no explanation on that point, the agreements being in our possession.

What we object to and wish settled before we shall agree to an arbitration is your proposed violation of the definite understanding entered into with us before we would agree to sign such agreements.

This understanding or agreement, as explained in our letter of January 31st, was that the copyrights of every text-book authorized for use in the Public Schools would be surrendered to the Education Department, and that if we signed agreements to surrender our copyrights we would have the right to select and republish any other book on said list.

You say you have no recollection of this understanding. We would respectfully state, in reply thereto, that we are prepared to verify it, not only with our own evidence, but also that of another responsible firm.

We have, etc.,

For the CANADA PUBLISHING CO. (LIMITED),
S. G. B.

Hon. G. W. Ross.

TORONTO, 23rd January, 1888.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—We beg to submit the following matter to you, and would respectfully ask your consideration and judgment in the premises.

Some years ago we published Smith and McMurchy's Elementary Arithmetic, and surrendered the copyright to the Department. After a time, we cannot be sure how long, permission was given to three houses to reprint it, Messrs. J. Campbell & Son, Adam Millar & Co. (now W. J. Gage & Co.), and W. Warwick, this without any arbitration or compensation to us in any way. In the meantime we had secured a sale in other Provinces, by an expenditure of money and effort, which these other houses reaped the benefit of. By your last list this book is now put on "the dying list," and practically, as regards Ontario, is already dead; in fact there has scarcely been any sale for it for some years, the Kirkland and Scott having been put into the schools in defiance of the regulations against unauthorized books, and finally, as it was in wide use, was authorized, but the copyright was not surrendered to the Department, as ours had been, and if we are not misinformed the publisher has steadily and constantly refused to do so. This, we respectfully submit, is an injustice to us; that the same house should have the privilege of reprinting our book, and yet refuse the same right with regard to theirs is a monstrous anomaly, and we can only think that your attention has not been drawn to this sufficiently to produce a decided change. What we would therefore ask from you is one of two things: (1) the right to reprint Kirkland and Scott's Elementary, or (2) the return of the copyright of Smith and McMurchy, now that its use in the schools of the Province has ceased. We prefer the former of these alternatives, as the sale of Kirkland and Scott continues. We should have permission to reprint on the same basis as ours was given—liberty to print without arbitration or compensation.

We leave the matter with you. We are sure that your sense of what is just and equitable will see the simple right of what we ask.

We remain, etc.,

THE COPP CLARK CO. (LIMITED),
H. J. CLARK.

TORONTO, 24th January, 1888.

DEAR SIRS,—The right of publishing Smith and McMurchy's Arithmetic was granted to other firms under regulations long ago obsolete. It would be impossible for me now to apply to that book the regulations respecting arbitration which apply to books recently authorized.

So long as the book is on list, even though italicised, I could not surrender the copyright. If, however, at any time it should be eliminated, I should have no objections to do so.

I agree with you, that the rights of publication should be reciprocal, and hope to be able to grant you all the privileges to be obtained in that way.

Yours truly,

GEO. W. ROSS.

THE COPP CLARK CO.,
Toronto.

THIS INDENTURE made in duplicate this twenty-fourth day of June, in the year of our Lord one thousand eight hundred and eighty-seven,

Between

THE CANADA PUBLISHING COMPANY (LIMITED), hereinafter called the Publishers, of the First Part,

and

HER MAJESTY THE QUEEN, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the Second Part.

Whereas the Publishers have made application to the Education Department of the Province of Ontario for the right to print and publish "The Public School Arithmetic" for use in the first four forms of the Public Schools of Ontario.

And Whereas the said Department of Education has approved of such application, and has agreed to grant the said Publishers the right to print and publish the said "The Public School Arithmetic," hereinafter called the Book, subject to the covenants and conditions hereinafter contained, and to the terms and conditions of the Regulations in that behalf of the said Department of Education.

Now therefore this Indenture Witnesseth, that in consideration of the premises and of the sum of one dollar of lawful money of Canada, the receipt whereof is hereby acknowledged, the said Publishers do hereby covenant with Her Majesty the Queen, her successors and assigns in manner following, that is to say :

1. That the Publishers shall from time to time and at all times observe, perform and fulfil in respect of the said book each and every of the terms and conditions of the Regulations of the said Education Department respecting the printing and publication of text-books, and also the terms and conditions hereinafter contained. and that each and every copy of each and every edition of the said book for use in the Province of Ontario shall in every particular be printed and published by the Publishers in strict conformity therewith.

2. And that the Publishers shall submit or cause to be submitted to the said Education Department sample copies of each and every edition of the said book to be hereafter printed and published, for sale or use in the Province of Ontario, for the approval of such Department as to the mechanical execution of the presswork, binding, and all other mechanical parts of the work, and that without such approval having been first had and obtained, no copy of any edition thereof shall be sold or disposed of for use in the said Province of Ontario. And furthermore, in order to avoid causing any loss to the said Publishers arising from, or liable to arise from, any edition of the said book not being approved of by the Education Department, owing to any serious defect or defects in any edition, and on that account condemned by the Education Department, and forbidden to be sold or issued to the schools or to the public, and also to more effectually protect the public, the said Publishers shall submit or cause to be submitted to the Education Department for examination sample sheets of the different forms of the book about to be printed, and specimens of the ink, paper, millboard, strawboard, cloth, mull, tapes, and other material proposed to be used by said Publishers in the printing and construction of the said book, together with a statement of the prices, weight, size, and other particulars necessary to judge of the relative quality of the different materials used or proposed to be used ; and the approval of the Education Department shall, before any work is proceeded with, be obtained in regard to the quality of the printing, and of the paper, and other material proposed to be used. And furthermore, after sanction has been given to the using of such material, or of such printing, presswork and binding, two sample copies at least of the book shall be submitted by said Publishers bound and finished in all respects as proposed to be issued by the said Publishers, and that without such approval first had and obtained, no work in regard to binding said book shall be proceeded with.

3. And that the paper to be used in each and every edition of the said book, and every copy thereof for use in the Province of Ontario shall be equal in quality to the sample prescribed by the said Education Department, to wit, of good quality, sixty-six pounds to the ream of 500 sheets, measuring thirty inches by forty inches, of good color and texture, and super calendered, or of such increased weight and improved quality as may be required by the Education Department, provided the cost of the same shall not exceed the cost of the sample herein prescribed, and no inferior quality of paper shall under any pretext whatsoever be used, The presswork and ink shall be first-class throughout, and shall be such as to produce together with the plates a clear and distinct impression ; and the stitching and binding of each and every edition of the said book, and the material used therein shall be equal to the sample submitted to and approved of by the Education Department as aforesaid, to wit : To be full bound in cloth, with stiff covers, embossed on first and last pages ; the title on first page stamped in black. Sections to be 16 pages each, and each section to be sewed with wire (or thread, at option of the Party of the Second Part), on three strong tapes, each tape to be one and one-quarter inches wide. Stitches and tapes on back of book to be covered with fine, strong, evenly-made mull, extending to within one half inch from top and bottom of books, and overlapping one inch on each side ; over the mull a strong piece of paper to be glued. Both tape and mull to be glued to covers. End papers to be of same quality as book, and pasted on separately, from first and last sections. Strawboard for covers, to be equal to sample copy submitted. Cloth for covers to be extra finished and twilled as per sample book submitted. Each and every part of the binding to be thoroughly done and durable, and no departure from such specification shall be made without the sanction of the Education Department. And no copy of the said book, which does not in all particulars comply with the foregoing provisions in regard to paper, presswork, typography, ink and binding shall be sold or disposed of for use in the Province of Ontario.

4. And that the said sample copies to be furnished as hereinbefore provided for shall remain on file in the said Education Department, and each and every copy of each and every edition published shall in all respects be equal to the sample copy so furnished to and on file in the said Department.

5. And that in case the Minister of Education points out to the said Publishers any defect or defects in the sample copies furnished to the said Department as aforesaid, but not deemed by him of sufficient importance to cause him to withhold his approval from such edition, then in such case the said Publisher shall in the next following edition or issue to that in which said defect shall have been pointed out, correct the same to the satisfaction of the said Department, but in case serious defects are pointed out by the Minister of Education to the Publishers, in any edition published by said Publishers, and in case such edition is condemned by the Minister of Education as unfit for use in the schools or for sale to the public, the condemned edition shall be withdrawn from sale for use in the Province of Ontario, and shall, if required by the Minister of Education, be delivered by the said Publishers into the custody of the Education Department, unless an arrangement satisfactory to the Minister be made for culling out any defective portion or portions, or the matter is in some other way adjusted.

6. And that the said book shall be of the size following, that is to say : Seven and one-eighth inches by four and seven-eighths inches, and shall consist of one hundred and eighty-four pages, exclusive of end papers and covers, each page of each and every book to have proper margin. And that the said book shall be sold at retail prices not exceeding the following, that is to say, the sum of twenty-five cents per copy.

7. And that in order it may be the more easily recognized and ascertained that each and every copy of each and every edition of the said book to be published and in use in the said Province of Ontario is not only authorized but approved as to its mechanical execution, contents and otherwise, by the said Education Department, the Publisher shall cause to be printed upon the title page of each and every copy of each and every edition of the said book the name of the firm by which such book is published, and the words "*Authorized by the Education Department for Ontario,*" or words to that effect, or shall place upon the title page or cover of each copy of the said book the official stamp of the Education Department.

8. And that the retail price of each and every copy of each and every edition of the said book shall be printed on the cover or title page thereof. No advertisements of any kind shall appear in any of the said books, or upon the covers of the said books, except such as are approved by the Education Department.

9. And that for the better securing the retail sale of the said book at a price not exceeding that above set forth as the maximum retail price, the Publishers shall make the sale to any purchaser buying quantities of such book of one dozen and upwards at one time, at prices at least twenty-five per cent. lower than the said prescribed retail prices on the usual terms of sale, and that to purchasers of the said book in lots of the said value of thirty-six dollars, computed at the said *retail* prices, the said Publishers shall make a further reduction of five per cent. in the price thereof, and in lots of the sale value of one hundred and twenty-five dollars, computed at the said *retail* prices, the said Publisher shall make a further reduction of five per cent. in the price thereof, and that the said Publisher shall and will from time to time and at all times keep on hand a sufficient quantity of copies of the said book to supply all demands of the public and trade therefor.

10. And that the Minister of Education, or any person by him appointed in writing for that purpose, shall and may from time to time and at any time during business hours enter the warehouse and all other business premises or any part thereof of the Publishers, for the purpose of inspecting any and every edition or issue of such authorized book, and every copy thereof, and shall have a right to take sample sheets, or other samples of material or sample copies of said books for the purpose of examination, whenever he thinks proper so to do.

11. And that in case the said Education Department shall at any time consider that the retail price heretofore mentioned of the said book should be reduced, the Minister of Education and said Publisher may arrange, at the option of the Minister of Education, a reduced retail price and scale of discounts, or the Minister of Education shall appoint an arbitrator, the Publishers shall appoint another, and the Chancellor of Ontario upon the application of the Minister of Education, or of the Publishers, or the joint application of all parties hereto, shall appoint a third, and in case the Publishers shall for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education omit to appoint an arbitrator, or to notify the Minister of Education in writing of the appointment, then the Chancellor of Ontario may name two arbitrators to act with the arbitrator appointed by the Minister of Education; and the Publishers shall at any and at all times when called upon so to do by the arbitrators or any two of them furnish the arbitrators with a detailed statement showing the cost of production and the returns of the sales of any or all copies of the said book, and shall in addition if so requested furnish the said arbitrators or any two of them for inspection all the vouchers and books which in any way refer to or contain any entry concerning the cost of production and returns of the sales of the said book, and that if it shall be deemed by the said arbitrators or any two of them that an excessive profit is being made by the said Publishers upon the sale of the said book the retail prices of the same shall be reduced to amounts which the said arbitrators or any two of them shall deem sufficient to yield a reasonable profit to the said parties, and such arbitrators or any two of them shall upon such appointment have full power to consider the question or questions submitted to them and to examine all statements, vouchers and books furnished by the said parties, and full power to compel the production of such additional statements, vouchers and books to those furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, with power to examine witnesses upon oath, and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties hereto, and the retail price or prices so fixed shall thenceforward govern the price or prices by the dozen and other wholesale prices as hereinbefore provided for. Provided that the change in prices aforesaid shall not take effect until six months after notice has been given for the appointment of arbitrators as aforesaid, and provided also that the expenses of such arbitration shall be borne by the Education Department.

12. And that the said Publishers will not print or publish, nor cause or authorize to be printed or published, nor be in any way accessory to the printing or publishing of any edition or copy or copies of the said book in the United States or anywhere else without the limits of the Province of Ontario, to be sold within the said Province of Ontario.

13. And that the Publishers shall not in any way, without the consent in writing of the Minister of Education acting on behalf of the Education Department, assign any right conferred upon such Publishers by this agreement.

14. And that should any difference of opinion arise between the parties hereto as to the construction to be put upon any of the terms, conditions and agreements herein contained, the same shall, if he contents to determine the same, be determined by the Chancellor of Ontario, after giving the parties hereto an opportnnity of presenting their views, in persou or by counsel, or if the said Chancellor decline to determine such difference, then at the option of either of the parties hereto, and on the conditions herein contained such matters of difference shall be determined by one of the Judges of the Superior Courts, and such determination by the said Chancellor or Judge shall be final and conclusive and binding upon the parties to this Indenture.

15. And that upon the Minister of Education giving to the said parties six months' notice, the Education Department may require the alteration of the contents of the said book, and may alter any of the specifications hereinbefore contained, provided the publishing is not thereby made more expensive ; but that no change shall be made by the Publishers in the contents of the said book, nor any addition thereto, nor any omission therefrom, nor any notes or appendices thereto, nor any other change in the subject matter thereof, without the consent in writing of the said Education Department first had and obtained. The notice hereinbefore provided for may be given by publication thereof in two issues of any newspaper published in the City of Toronto and in the *Ontario Gazette*.

16. And that the Publishers, their successors or assigns shall have the sole right to print and publish within the said Province of Ontario, and Dominion of Canada, the said book.

Provided always, however, that any other publisher shall have the right of publication at any time after one year from the 1st day of September, 1887, by permission to be obtained from the Department of Education for Ontario, subject to a royalty of ten per cent. on the retail price, as at first issued or afterwards reduced, of each and every copy of said book as long as republished and subject to a proper allowance to cover cost of authorship and other necessary expenses in the preparation of the said books, to be settled as hereinafter provided, and to be paid to the publishers of the first part, or at the option of the Department of Education for Ontario a sum in gross may be paid in lieu of such royalty, and allowance and expenses, the amount of said allowance and expenses or sum in gross to be settled by the Minister of Education and the publisher of the first part ; or at the option of the Minister of Education by three arbitrators, one of whom shall be appointed by the Minister of Education, one by the said party of the First Part, and the third by the publisher desiring the said right of publication ; or if more than one publisher applies at the same time for the said right, then the third arbitrator shall be appointed by the publishers so desiring the said right. And in case either or both of said publishers so concerned shall for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education as aforesaid, omit to appoint an arbitrator or to notify the Minister of Education in writing of his appointment, then the Minister of Education may appoint the other arbitrator or arbitrators so omitted to be appointed, and the said arbitration when so finally constituted shall have full power to consider the matters in question, and to examine all statements, vouchers and books furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, and to examine witnesses upon oath ; and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties concerned, and the costs, charges and expenses of such arbitration shall fall upon and be borne by the applying publishers so desiring to republish. Provided also that after any arbitration has been held as aforesaid and the rights of the parties concerned have been settled thereby, if any other publisher or publishers should desire the said right of publi-

cation, then the Department of Education shall, if they think it proper to accord said right, give instruction as to the manner in which the said questions of the sum in gross or of the royalty should be settled by and between the parties interested therein.

17. And the publisher hereby agree that if the publishers or any of them (if more persons than one are of the First Part hereto) deliberately disregard the terms of this agreement, or fail to carry out the same in a matter of substance, the Publisher shall forfeit all his or their rights under this agreement, and the Minister of Education may apply to any Division of the High Court of Justice to restrain the Publisher from further printing, publishing or selling any copies of the said book not in accordance with this agreement.

18. Provided and it is hereby expressly agreed that no edition or copy of the said book shall be printed or published by the Publishers until the Publishers shall have executed these Presents and shall have executed to Her Majesty the Queen a bond in the penal sum of five thousand dollars, with two sureties approved by the Minister of Education, each bound in the sum of two thousand five hundred dollars, conditioned for the due observance and fulfilment by the Publisher of all the terms, conditions, clauses, agreements, obligations and covenants herein contained, and also of the Regulations of the Education Department from time to time in force respecting text-books for use in the Public Schools.

19. It is hereby expressly declared and agreed that the Minister of Education may, on giving the Publishers one year's notice in writing, terminate this agreement at any time after the expiration of five years from the date hereof, and declare the said book no longer authorized as a text-book for use in the schools of the Province of Ontario, in which case the copyright shall be assigned back by the Minister of Education to the original publisher.

20. Provided also that in case the Publishers or any other person entitled to any right by virtue of this agreement shall assign the same to any other person the right of the Publisher or such other person shall at the discretion of the Education Department thereupon cease and become forfeit and absolutely at an end.

21. To prevent any possibility of misapprehension, it is hereby expressly declared and agreed that in case there are more persons than one named as *of the First Part* hereto, the breach by any one of such persons of any covenant, term or condition herein contained, whether such covenant, term or condition is affirmative or negative, shall be a breach for which all such persons shall be liable.

22. It is understood and agreed between the parties hereto that this agreement is entered into subject to the approval of His Honor the Lieutenant-Governor of the Province of Ontario in Council.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in the presence of
CHAS. BUILDER, as to C. P. Co.
H. M. WILKINSON, as to signature of G. W. Ross.

FOR THE CANADA PUBLISHING CO. (LIMITED.)
ARTHUR B. LEE, President. *(Seal.)*
S. G. BEATTY, Manager.
G. W. ROSS. *(Seal.)*

GEOGRAPHY.

67 West Nile Street,
Glasgow, 26th February, 1887.

The Hon. The Minister of Education,
Ontario, Canada.

Sir,—The specialties in geographical appliances for schools, which we have been selling in large and increasing quantities here, we desire respectfully to bring under your notice. By this post we send detailed circulars of these.

This new departure—strong and portable *alto rilievo* models of continents, countries, and of the typical geographical forms—has had wide acceptance in every grade of school, as you will see from the very varied testimonials printed on our circulars. We ought to say, too, that all those who grant these testimonials had previously purchased and used our models in their institutions.

The models, or raised maps, are all in frames like pictures, and can be hung on the school walls, or laid upon a table for use. The frames permit one model being placed on the top of another without injury to the mountains.

The impressiveness of this mode of bringing continents and countries under the eye of the scholar is admitted by all educationists; but hitherto the expense of such appliances prevented teachers from having them in school. Now, we think, price need not deter those who desire to have their schools furnished with what is really equal to a revelation to the pupil.

We have furnished schools all over this country with these models, and the Government of Australia and the Bureau of Education in the U.S.A. have had them shipped to their order, finding that the models were in no way injured by the long and jolting journey.

Should you be pleased to favor us with an order for all or any of these models, you may depend on our utmost attention to your commands. If it lies more in the province of other boards (country or city) to order, we shall be glad to send circulars to them, if we had any guidance in the matter.

Waiting your esteemed favor,

We are, Sir,
Yours most respectfully,

WM. MARTIN & CO.

Education Department,
Toronto, 5th July, 1887.

Gentlemen,—The Minister desires me to state with reference to your geographical specialties, that the authorized book lists have recently been revised, and that no further additions can be made at present.

Models and maps can be used without special authorization.

Your obedient servant,

ALEXANDER MARLING,
Secretary.

Messrs. Wm. Martin & Co.,
67 West Nile Street, Glasgow.

67 West Nile Street,
Glasgow, 28th September, 1887.

Hon. The Minister of Education,
Education Department,
Ontario, Canada.

Sir,—We were favored with your communication of 5th July last, anent our geographical models for schools, stating that "the authorized book lists had recently been revised, and that no further additions can be made at present."

We beg now to wait upon you with our new catalogue, on page 2 of which please see our terms for foreign orders, viz.: ocean freight free, etc., etc. Our extending trade with the colonies and America, etc., has enabled us to make arrangements such as these, which will enable such as yourselves to know more precisely what your order would ultimately cost you.

The testimonials, such as pp. 4, 9, 16, shew how greatly appreciated our models are by educationists. The testimonials are all from such schools only as had previously purchased and used our models in school work.

The "Scotland" model is our new work, to the order of the Glasgow, Edinburgh, and other Scotch boards, and we think it would be an acceptable model in your schools. It has given entire satisfaction.

The large geographical model, page 6, 10 of catalogue, is a remarkably effective aid to the teacher. So great has been the sale that we have been thus early enabled to write off a much larger proportion of the initial costs of the plant, etc., for model manufacture, and we have thus been able to quote £3 9s. 6d., freight, etc., free, instead of £4 15s., our former price.

Referring you to our descriptive catalogue, with prices, testimonials, etc., and hoping to have the honor of an order for one or two of your schools or colleges as a beginning, to which we beg to assure you of our best attention.

We are, Sir,
Yours most respectfully,

WM. MARTIN & CO.

Office of the Canada Publishing Co. (Limited),
Toronto, 27th April, 1887.

Sir,—We beg to submit as suitable text-books for authorization for use in the schools of Ontario, sample copies of two new geographies, "The Public School Geography," and "The High School Geography."

In their preparation we employed the services of most eligible men of special qualifications for the literary part of the work, and, in all cases where we had difficulty in getting designs and engravings fully satisfactory here, we had them executed by the best specialists to be found in the United States, and thereby spared neither pains nor expense in making the artistic part of the work far superior to any other geography ever before published in Canada.

We are willing to fix the retail price for "The Public School Geography" at 75c., for "The High School Geography," $1. The plates of the two books have cost us over $13,000, aside from the value of our own time and work, extending over a period of three years. When you consider the large sum risked in the enterprise, and the fact that these books must, in consequence of so many maps and fine engravings be printed on more expensive paper than the geographies now in use, you will see that the prices fixed are the very lowest at which such books can be placed on the market.

The geography used almost exclusively in the public schools of Ontario for the past ten years has been the "Modern School Geography and Atlas," published by our-

selves. This book was issued over eighteen years ago, and sold since first published at 75 cents, although it is only two-thirds the size of the new "Public School Geography" now offered, contains no expensive illustrations, and is manufactured in a much cheaper form, both as to material and workmanship.

The new "High School Geography" is larger than either of the advanced geographies now on the authorized list at the following prices: "Calkin's Geography of the World," price $1.50; "Lovell's Advanced Geography," $1.50.

We have the honor to be, Sir,
Your obedient servants,

For the CANADA PUBLISHING CO. (LIMITED),
S. G. B.

Hon. G. W. Ross,
Minister of Education, City.

NEW YORK, May 20th, 1887.

G. W. Ross,
Minister of Education,
Toronto, Ontario.

MY DEAR SIR,—We take the liberty of sending you a copy of Monteith's "New Physical Geography," to which we would respectfully call your attention when received.

We believe this book to be admirably adapted to the schools under your supervision, and would respectfully solicit your authorization of the same for Ontario.

We have sent copies of the work to other prominent educators in Ontario, and trust you will use your influence in favor of it. If you will kindly state what further steps should be taken, you will greatly oblige us.

Hoping to hear from you favourably.

Very respectfully yours,

JOHN B. PRATT,
For A. S. Barnes & Co.

EDUCATION DEPARTMENT,
TORONTO, 1st June, 1887.

SIR,—I am desired by the Hon. the Minister of Education to convey to you his thanks for the following document, which has been duly received, viz:—one copy "Monteith's New Physical Geography."

I have the honor to be, Sir,
Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. A. S. BARNES & Co., Publishers,
111 & 113 William Street, New York.

PUBLISHING HOUSE OF A. S. BARNES & Co.,

NEW YORK, November 16th, 1887.

Hon. G. W. Ross,
Minister of Education,
Toronto, Ontario.

MY DEAR SIR,—Some time since we had the pleasure of sending you a copy of Monteith's New Physical Geography for examination with a view to recommending its use in the Ontario High Schools. We are desirous of learning the result of your examination of the book, and especially if it can be introduced into the schools mentioned, and we now respectfully solicit a reply.

Trusting to hear from you favourably,

I remain, very respectfully yours,

JOHN B. PRATT,
For A. S. Barnes & Co.

EDUCATION DEPARTMENT,
TORONTO, November 25th, 1887.

GENTLEMEN,—The Minister of Education is obliged by you sending "The new Physical Geography," but desires me to state that the list of authorized books is now closed, and no additions will be made at present.

Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. A. S. BARNES & Co.,
Publishers, etc.,
New York, U.S.

TORONTO, 21st May, 1887.

MY DEAR MR. BRYANT,—The order for the authorization of the new geography is ready for submission to Council as soon as I return and Council meets, which I hope will be next week.

See me Thursday forenoon *re* book on Agriculture.

Yours truly,

GEO. W. ROSS.

J. E. BRYANT, M.A., Esq.,
Toronto.

TORONTO, 10th September, 1887.

SIR,—We send you herewith two copies of the "Public School Geography."

They should have remained in the press until this evening, but with that exception are completed, as we intend binding the edition.

Please let us know whether all right or not, that we may send them out next week, and oblige,

Your obedient servants,

For the CANADA PUBLISHING CO. (LIMITED),
S. G. B.

Hon. G. W. Ross,
Minister of Education.

EDUCATION DEPARTMENT,
TORONTO, 10th September, 1887.

MY DEAR SIR,—With reference to the Public School Geography just issued I find the price is not marked on the cover. The book should not go out till this is done.

The maps are set in too far by the binder, particularly the map of Ontario.

The colouring of many of the maps is not quite distinct enough.

Yours truly,

GEO. W. ROSS.

SAMUEL G. BEATTY, Esq.,
Manager Canada Publishing Co.,
Toronto.

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184 SPADINA AVENUE,
SATURDAY, September 17th, 1887.

The Hon. GEO. W. Ross, M.P.P.,
Minister of Education.

MY DEAR SIR,—I received to-day from the Canada Publishing Co. a copy of the authorized "Public School Geography," and have spent this evening in examining it. I cannot help intruding upon you to say how much I am pleased with the book in its literary, mechanical and artistic aspects, and how thoroughly well it appears to me to meet the educational requirements of our schools. I congratulate you very heartily on securing, in this important subject, so admirable an addition to the authorized text-books, and one which from my knowledge of the subject and the keen scrutiny I have given the book, I feel sure will stand fire from the critics and arraigning of the Department.

At a first glance, it seemed rather a formidable book for the Public Schools, but the bulk of the large type matter is not more than is essential, while the matter in small type will make the book serviceable to junior classes in the High Schools and to teachers in both grades. The simplification of matter in the early part of the book is both wise and politic. The prefatory hints to the teacher I can especially commend as well as the plan of the book, and the wise exclusion of the old-fashioned trumpery details to be got off by heart—bays, capes, mountains, rivers and other non-essential cosmographical facts. The boundaries of countries and other physical features are properly confined to a few brief paragraphs, while space is then obtained for more important information with regard to soil and climate, the industries and occupations of the people, with whatever is necessary to be said of religion, education and government of the people.

In dealing with our own country, the preliminary "journey" with its easy, bright narrative is a good and well-wrought-out idea.

The style is clear, easy and flexible, the matter nowhere overlaid or diffused, and the facts and information are accurate and well marshalled and set forth. In my examination of the book, brief as it has been, I have found little to take exception to, either as to what has been given or as to what has been left out. I have never before examined a geography which has so thoroughly stood a critical examination as has this one; against only two things in the portion dealing with Canada have I put a query mark in the margin. On page 37, 2 col. (par. 9), the statement made about the fusion of our people with "one common nationality" rather excites a smile, following, as it does, the reference to the French in the Quebec province. Were the statement "true" confederation would not be in the peril it is in from the alien nationality of Quebec, and we would not be confronted as we are with the serious "French problem."

The other statement queried (page 49, 2nd col.) speaks of Owen Sound as having one of the best harbours in Ontario. Is this quite the fact? What I have seen of it is that it would close up, like a "strong" controversy, if the steam dredge was not always at work.

The maps on the whole are excellent, and so are the illustrations, particularly those in the Dominion section of the book. In teaching of Asia, I am not sure if I had been the author of the book that I would have subordinated Hindostan, our great Indian Empire, as the writer has done. It seems lost in the other sub-divisions of Asia, including Russia and Turkey in Asia, China, Indo-China, Japan, Persia, Arabia and the Malay Peninsula and Archipelago. But this is not a very serious matter.

I do not know who the author and compilers are, but I honestly and frankly say that they and you may be proud of the book. I know of no text-book on the subject better than this, and I have critically examined in my day perhaps fifty of them. It is a most efficient manual in all the essentials of political and physical geography, and bears the marks of literary competence, practical teaching ability, wide reading, accurate research, good judgment and strong common sense.

Very sincerely and respectfully yours,

GEO. MERCER ADAM.

Toronto, 20th September, 1887.

My Dear Sir,—I feel refreshed after reading the frank and generous terms in which you speak of the new Public School Geography. Now and again my serenity becomes disturbed by the buzzing of insectivorous critics, such as "Fabius" in yesterday's *Mail* and the writer from Park Hill in to-day's, on the text-books in history and grammar respectively. A critic that grapples with the whole purpose of a book and can discover in it evidences of design, like the finder of the watch on the moor, so useful to Paley in his work on natural theology, is a *rara avis*. From the tenor of your letter you have evidently looked into the geography from this standpoint first. I am glad that it stands, not only this test, but the other, and, perhaps, in some respects, the more severe, but less important one of accuracy in detail. I have taken the liberty of sending your letter to the author, and may, if no objection is offered, take the liberty hereafter of using it in public.

Yours truly,

GEO. W. ROSS.

G. Mercer Adam, Esq.,
184 Spadina Avenue, Toronto.

Toronto, 21st Sept. 1887.

My Dear Sir William,—I send you herewith a copy of the new Public School Geography just authorized by my Department.

It has been prepared on a plan suggested by myself, and is, in many respects, different from any other geography in the market.

I do not write to ask you for a certificate or testimonial, but just simply to place in your hands a copy of the book.

Yours truly,

GEO. W. ROSS.

Sir William Dawson, K. C. B.,
Montreal.

McGill University,
Montreal, Oct. 17th, 1887.

Dear Mr. Ross,—I have to thank you for your kindness in sending me a copy of the new "Public School Geography," as I take much interest in the subject, owing to its wide and varied connections with natural science.

The book seems admirably got up and I like the adoption of an idea which I advocated more than thirty years ago, of beginning at the schoolroom and its surroundings. I think also that the special notes for the teacher constitute a very valuable feature.

I shall hope to mention the book at the meeting of our Association of Teachers this week.

Truly yours,

J. W. DAWSON.

Hon. G. W. Ross.

Toronto, 21st September, 1887.

Dear Sirs,—I send you herewith a copy of a school geography issued by my Department for the Public Schools of Ontario. The literary work of the book is the product of one of our own teachers and contains several new features which will be quite patent to any professional man. Considerable care has been taken with the mechanical part of the book, and as a whole its publication has given general satisfaction. As you have frequently favoured us with your exchanges I take the liberty of sending you this geography, and hope that the reciprocity may continue. If you have any opinion to offer upon it I shall be pleased to receive it, although I do not require, so far as I know, to make any public use of it. I also send a copy of our Chemistry, prepared by a Canadian teacher and published by a Canadian publisher.

Yours truly,

GEO. W. ROSS.

Messrs. A. S. Barnes & Co.,
New York.

New York, 27th September, 1887.

Mr. Geo. W. Ross,
Toronto.

Dear Sir,—The geography you so kindly sent is received; please accept our thanks for same. The work does you great credit and is a vast improvement upon much of the work done in Canada. It is only fair to say, however, that the printing could be greatly improved.

In order to show you what we are doing in the States, it gives me great pleasure to send you a copy by mail to-day of our new Complete Geography, which please accept with my compliments, and believe me,

Yours, etc.,

A. S. BARNES & CO.

Toronto, 21st September, 1887.

Dear Sirs,—I send you herewith a copy of a school geography issued by my Department for the Public Schools of Ontario. The literary work of the book is the product of one of our own teachers and contains several new features which will be quite patent to any professional man. Considerable care has been taken with the mechanical

part of the book, and as a whole its publication has given general satisfaction. As you have frequently favoured us with your exchanges I take the liberty of sending you this geography, and hope that the reciprocity may continue. If you have any opinion to offer upon it I shall be pleased to receive it, although I do not require, so far as I know. to make any public use of it. I also send a copy of our Chemistry, prepared by a Canadian teacher and published by a Canadian publisher.

Yours truly,

GEO. W. ROSS.

Messrs. GINN & Co.,
Publishers, etc.,
7 Tremont Place, Boston, U.S.

BOSTON, September 26th, 1887.

Mr. GEO. W. Ross,
Toronto, Ont.

DEAR SIR,—We sincerely thank you for your kindness in forwarding copies of your Geography and Chemistry. We shall take an early opportunity to look them over.

We shall always be glad to put into your hands such books as you may be interested in, and we hope that the trade so pleasantly commenced may be continued for many years, and that it may prove mutually helpful.

Very truly yours,

GINN & CO.

TORONTO, 21st September, 1887.

DEAR SIRS,—I send you herewith a copy of a school geography issued by my Department for the Public Schools of Ontario. The literary work of the book is the product of one of our own teachers and contains several new features which will be quite patent to any professional man. Considerable care has been taken with the mechanical part of the book, and as a whole the publication has given general satisfaction. As you have frequently favoured us with your exchanges I take the liberty of sending you this geography, and hope that the reciprocity may continue. If you have any opinion to offer upon it I shall be pleased to receive it, although I do not require, so far as I know, to make any public use of it. I also send a copy of our Chemistry prepared by a Canadian teacher and published by a Canadian publisher.

Yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Publishers,
3 Tremont Place, Boston.

BOSTON, MASS., October 10th, 1887.

GEO. W. Ross,
Minister of Education,
Toronto, Canada.

DEAR SIR,—Your favour of the 21st September came duly to hand. The geography has also been received. The Chemistry has not yet come.

The geography has indeed many features that you have a right to be proud of. We are sorry, however, that we cannot bring ourselves to believe that at least three-quarters

of the statistics found in it are necessary to be taught in schools. They are sure to be forgotten, and it is not a good thing to learn things for the sake of forgetting them. It undisciplines the mind, if one may so speak. All such things should be, and will be learned in later life, and in a way to make them abiding, if, indeed, it be in accordance with any natural educational law that they should be abiding.

Your favour in answer to our enquiries as to duplicate books on your list is also received. We did not have reference to the books printed in italics, which we supposed would drop out in time, but rather to duplicates of other books; for instance, you have two Latin Grammars, two Geometries, two Trigonometries, two German Grammars, and we are wondering why you couldn't put on two Chemistries, adopting ours.

It is not quite clear to us yet, but you need not trouble to make it clear, though we should be glad to see some of our text-books in use alongside of some that you have on your list, with the privilege to teachers to drop out the one they find least efficient.

It may interest you to know that our German Grammar that you thought of adopting has already taken its place at the very fore front of *working* grammars. It is to have a wide and useful career.

We also send a copy of a manual of Astronomical Geography just published by us. Your *Educational Journal*, in its last issue, says: "It is a pity that this book or its equivalent should not form part of our third class teachers' course of study."

Respectfully yours,

D. C. HEATH & CO.

TORONTO, 28th September, 1887.

MY DEAR SIR,—I send you herewith a copy of a new geography just issued by the Education Department of the Province of Ontario. The book has some features new, at least in this country, as to the method of presenting this subject to pupils from ten to fourteen years of age. As a teacher of experience whose opinion I would value will you kindly let me know what you think of it, either by letter or through the columns of your paper which I read monthly with great pleasure.

Yours truly,

GEO. W. ROSS,
Minister of Education.

WILLIAM A. MOWRY, Esq.,
Education,
No. 50 Bromfield Street, Boston.

BOSTON, Mass., Deccember 17, 1887.

Hon. GEO. W. ROSS,

DEAR SIR,—I beg you will excuse me for my long delay in answering your letter concerning the new geography lately issued by the Educational Department of Ontario. I have necessarily been absent from home about one half the time since your letter was received, and the pressure of business when I have been at home has been such as to prevent my finding time necessary to give the geography a careful study. I have meantime, however, submitted the book to several of my friends who are interested in the subject and whose judgment I prize highly on such matters. Their report to me is very satisfactory and exceedingly complimentary to the work. I have now been able to look the book through, with not so much care as I should desire, but sufficiently to form rather a decided opinion concerning its merits.

I am amazed at the large amount of fresh matter covering valuable information which the book contains. The author is evidently no novice, but experienced and scholarly in respect to matter and style.

I like many features of the book. It seems to be almost entirely different from the ordinary geography. One feature of especial interest to me is the entire absence of questions. A class carried through this book by an intelligent teacher will gain a vast amount of geographical knowledge. In mechanical execution, however, the book is scarcely on a par with our best American publishers.

I congratulate you heartily on the value of this new text-book. A notice of a somewhat extended character will appear in the January number of *Education* and *Common School Education*.

Yours, etc.,

WILLIAM A. MOWRY.

TORONTO, 19th December, 1887.

MY DEAR SIR,—I observe the new "High School Geography" does not contain any maps or letter-press referring to the Geography of Ancient Greece, Rome, etc.

I intended the "High School Geography" to cover the full High School course in this subject, and this includes ancient geography, and its omission on the part of the editor should be remedied in the next edition. Three or four pages and one good map would be all that would be required. Do you think can this be done ?

Yours truly,

GEO. W. ROSS.

SAM. G. BEATTY, Esq.,
Manager, Canada Publishing Co.
Toronto.

CANADA PUBLISHING COMPANY,
TORONTO, December 20th, 1887.

SIR,—In replying to your inquiry of yesterday, we beg to say that the addition "of three or four pages of letter-press and a good map" to our High School Geography would cost a considerable amount for authorship, engraving, electrotyping etc., and would make the book much more expensive to produce. As you will see, by examining it, the maps and letter-press now make even forms, and any addition thereto will add to the expense of the material used and an extra form of printing.

The sale the book has met with, thus far, is too small to warrant such an extra expense, unless the price of the book could be increased to cover it.

Your obedient servants,

THE CANADA PUBLISHING CO., (LIMITED,)
S. G. B.

Hon. GEO. W. ROSS,
Minister of Education,
City.

RIDGETOWN, January 27th, 1888.

Hon. GEO. W. ROSS.

DEAR SIR,—As you may be attacked on the subject of text-books, I enclose a copy of the opinion of the Board of Education of Boston, Mass., to whom, and a specialist, my geography was submitted by the publishing firm of Ginn & Co.

You have doubtless received from Mr. Beatty the criticisms forwarded to him.

I regret the slight errors found in the book ; some, such as the terminus of the C. P. R., and steamers at Owen Sound were not mistakes when I wrote ; changes were made subsequent to electrotyping ; the length of Manitoulin and population of Portland and Albany are printer's errors. There are two St. Henri's in Quebec ; the one mentioned is the wrong one—it should have been put as a suburb of Montreal. I know of but the first.

These are all the errors I know of, and were indicated to Mr. Beatty with request to have "errata" slips sent to all the booksellers ordering the book. I do not think he has acted on my request.

Yours, etc.,

GEO. A. CHASE.

Office of Board of Education,
Boston, December 6th, 1887.

Dear Mr. Ginn,—We have examined the High School geography, and agree in the conclusion that the plan of combining physical and political features is excellent, and is in accord with the best and latest theories regarding the teaching of the subject.

We think that if the author could work out a book on this general plan adapted to the Grammar Schools of the United States, it would be well received.

Toronto, January 31st, 1888.

My Dear Sir,—Will you kindly prepare for me all the testimonials received from Teachers, Inspectors or others concerning any text-book publishing by your house, I want to make copies of them for reference.

Mr. Chase calls my attention to one or two errors in the High School geography. Would it not be well to place errata slips in the books yet unsold ? This would indicate to the public that we discerned these mistakes ourselves, before they were pointed out by some carping critic.

Yours truly,

GEO. W. ROSS.

Sam. G. Beatty, Esq.,
Manager Canada Publishing Co.
Toronto.

Toronto, February, 2nd, 1888.

Sir,—In reply to yours of the 31st ultimo, I beg to say that we have been furnished with errata for High School geography by Mr. Chase, and others who are using the book.

They are very few and not of a serious character. We are having them placed, as you suggest, in all books on hand.

Your obedient servant,

SAM. G. BEATTY.

Hon. Geo. W. Ross,
Minister of Education.

THIS INDENTURE made in duplicate this twenty-fourth day of June in the year of our Lord One thousand eight hundred and eighty-seven

Between

The Canada Publishing Company (Limited) hereinafter called the Publishers, of the first part,

and

Her Majesty the Queen, represented herein by the Honourable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the Publishers have made application to the Education Department of the Province of Ontario for the right to print and publish the Public School Geography for use in the first four forms of the Public Schools of Ontario.

And Whereas the said Department of Education has approved of such application, and has agreed to grant the said Publishers the right to print and publish the said the Public School Geography hereinafter called the *Book*, subject to the covenants and conditions hereinafter contained, and to the terms and conditions of the Regulations in that behalt of the said Department of Education.

Now therefore this Indenture Witnesseth, that in consideration of the premises and of the sum of One Dollar of lawful money of Canada, the receipt whereof is hereby acknowledged, the said Publishers do hereby covenant with Her Majesty the Queen, her successors and assigns in the manner following, that is to say:

1. That the Publishers shall from time to time and at all times observe, perform and fulfil in respect of the said book each and every of the terms and conditions of the Regulations of the said Education Department respecting the printing and publication of text books, and also the terms and conditions hereinafter contained, and that each and every copy of each and every edition of the said book for use in the Province of Ontario shall in every particular be printed and published by the Publishers in strict conformity therewith.

2. And that the Publishers shall submit or cause to be submitted to the said Education Department sample copies of each and every edition of the said book to be hereafter printed and published, for sale or use in the Province of Ontario, for the approval of such Department as to the mechanical execution of the presswork, binding and all other mechanical parts of the work, and that without such approval having been first had and obtained, no copy of any edition thereof shall be sold or disposed of for use in the said Province of Ontario. And furthermore, in order to avoid causing any loss to the said Publishers, arising from or liable to arise from, any edition of the said book not being approved of by the Education Department, owing to any serious defect or defects in any edition, and on that account condemned by the Education Department, and forbidden to be sold or issued to the schools or to the public, and also to more effectually protect the public, the said publishers shall submit or cause to be submitted to the Education Department for examination sample sheets of the different forms of the book about to be printed, and specimens of the ink, paper, millboard, strawboard, cloth, mull, tapes,, and other material proposed to be used by said Publishers in the printing and construction of the said book, together with a statement of the prices, weight, size, and other particulars necessary to judge the relative quality of the different materials used or proposed to be used; and the approval of the Education Department shall, before any work is proceeded with, be obtained in regard to the quality of the printing, and of the paper, and other material proposed to be used. And furthermore, after sanction has been given to the using of such material, or of such printing, presswork and binding, two sample copies at least of the book shall be submitted by said Publishers bound and finished in all respects *as proposed to be issued* by the said Publishers, and that without such approval first had and obtained, no work in regard to binding said book shall be proceeded with.

3. And that the paper to be used in each and every edition of the said book, and every copy thereof for use in the Province of Ontario shall be equal in quality to the sample perscribed by the said Education Department, to wit, of good quality, eighty pounds to the ream of 500 sheets, measuring thirty-three inches by thirty nine inches, of good colour and texture, and super calendered, or of such increased weight and improved quality as may be required by the Education Department, provided the cost of the same shall not exceed the cost of the sample herein prescribed, and no inferior quality of paper shall under any pretext whatsoever be used. The presswork and ink shall be first-class throughout, and shall be such as to produce together with the plates a clear and distinct impression; and the stitching and binding of each and every edition of the said book, and the material used therein shall be equal to the sample submitted to and approved of by the Education Department as aforesaid; each and every part of the binding to be thoroughly done and to be durable to wit: To be quarter bound in cloth with paper sides. To be sewed with thread in sections of sixteen pages each, each section to be sewed on to three tapes or strings; stitches and tape on back of books to be covered with fine, strong, evenly made mull, extending to within one half-inch from top and bottom of books, and overlapping one inch on each side; over the mull a strong piece of paper or pressing to be glued; both tapes and strings and mull to be glued to covers; quality of strawboard to be good, and to weigh fifty lbs to the bundle of twenty-five boards of the ordinary size; end pieces to be pasted on separately from first and last sections and to be of same quality and strength of that used in book; paper for sides to be of good quality and well printed as per sample submitted and approved; maps to be printed in colors and pasted in at option of the Party of the Second Part; the books may be wire-stabbed with four wires through wide pieces of strong cotton on each side of book, and cotton and end papers to be well glued to covers; double maps mounted on paper guards and pasted in; and no departure from such specification shall be made without the sanction of the Education Department. And no copy of the said book which does not in all particulars comply with the foregoing provisions in regard to paper, presswork, typography, ink and binding shall be sold or disposed of for use in the Province of Ontario.

4. And that the said sample copies to be furnished as hereinbefore provided for shall remain on file in the said Education Department, and each and every copy of each and every edition published shall in all respects be equal to the sample copy so furnished to and on file in the said Department.

5. And in case the Minister of Education points out to the said Publishers any defect or defects in the sample copies furnished to the said Department as aforesaid, but not deemed by him of sufficient importance to cause him to withhold his approval from such edition, then in such case the said Publishers shall in the next following edition or issue to that in which said defect shall have been pointed out, correct the same to the satisfaction of the said Department, but in case serious defects are pointed out by the Minister of Education to the Publishers in any edition published by said Publishers, and in case such edition is condemned by the Minister of Education as unfit for use in the schools or for sale to the public, the condemned edition shall be withdrawn from sale for use in the Province of Ontario, and shall, if required by the Minister of Education, be delivered by the said Publishers into the custody of the Education Department, unless an arrangement satisfactory to the Minister be made for culling out any defective portion or portions, or the matter is in some other way adjusted.

6. And that the said book shall be of the size following, that is to say: Nine and five-eighth inches by seven and seven-eighth inches, and shall consist of one hundred and sixty-four pages. And that the said book shall be sold at retail prices not exceeding the following: That is to say, the sum of seventy-five cents for each copy.

7. And that in order it may be more easily recognized and ascertained that each and every copy of each and every edition of the said book to be published and in use in the said Province of Ontario is not only authorized but approved as to its mechanical execution, contents, and otherwise, by the said Education Department, the Publishers shall cause to be printed upon the title page of each, and every copy of each, and every edition of

the said book the name of the firm by which said book is published, and the words "*Authorized by the Education Department for Ontario,*" or words to that effect, or shall place upon the title page or cover of each copy of the said book the official stamp of the Education Department.

8. And that the retail price of each and every copy of each and every edition of the said book shall be printed on the cover or title page thereof. No advertisements of any kind shall appear in any of the said books, or upon the covers of the said books, except such as are approved by the Education Department.

9. And that for the better securing the retail sale of the said book at a price not exceeding that above set forth as the maximum retail price, the Publishers shall make the sale to any purchaser buying quantities of such book of one dozen and upwards at one time at prices at least twenty-five per cent. lower than the said prescribed retail prices on the usual terms of sale, and that to purchasers of the said book in lots of the said value of one hundred and eight dollars computed at the said *retail* prices, the said Publishers shall make a further reduction of five per cent. in the price thereof, and in lots of the sale value of three hundred and seventy-five dollars, computed at the said *retail* prices, the said Publishers shall make a further reduction of five per cent. in the price thereof, and that the said Publishers shall and will from time to time and at all times keep on hand a sufficient quantity of copies of the said book to supply all demands of the public and trade therefor.

10. And that the Minister of Education, or any person by him appointed in writing for that purpose, shall and may from time to time and at any time during business hours enter the warehouse and all other business premises or any part thereof of the Publishers, for the purpose of inspecting any and every edition or issue of such authorized book and every copy thereof, and shall have a right to take sample sheets or other samples of material or sample copies of said books for the purpose of examination, whenever he thinks proper so to do.

11. And that in case the said Education Department shall at any time consider that the retail price heretofore mentioned of the said book should be reduced, the Minister of Education and said Publishers may arrange, at the option of the Minister of Education, a reduced retail price and scale of discounts, or the Minister of Education shall appoint an arbitrator, the Publishers shall appoint another, and the Chancellor of Ontario upon the application of the Minister of Education or of the Publishers, or the joint application of all parties hereto, shall appoint a third, and in case the Publishers shall for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education omit to appoint an arbitrator, or to notify the Minister of Education in writing of the appointment, then the Chancellor of Ontario may name two arbitrators to act with the arbitrator appointed by the Minister of Education ; and the Publishers shall at any time and at all times when called upon so to do by the arbitrators or any two of them furnish the arbitrators with a detailed statement showing the cost of production and the returns of the sales of any or all copies of the said book, and shall in addition if so requested furnish the said arbitrators or any two of them for inspection all the vouchers and books which in any way refer to or contain any entry concerning the cost of production and returns of the sales of said book, and that if it shall be deemed by the said arbitrators or any two of them that an excessive profit is being made by the said Publishers upon the sale of the said book the retail prices of the same shall be reduced to amounts which the said arbitrators or any two of them shall deem sufficient to yield a reasonable profit to the said parties, and such arbitrators or any two of them shall upon such appointment have full power to consider the question or questions submitted to them and to examine all statements, vouchers and books furnished by the said parties and full power to compel the production of such additional statements, vouchers and books to those furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, with power to examine witnesses upon oath, and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties hereto, and the retail price or prices so fixed shall thenceforward govern the price or prices by the dozen and other wholesale prices as hereinbefore pro-

vided for. Provided that the change in prices aforesaid shall not take effect until six months after notice has been given for the appointment of arbitrators as aforesaid, and provided also that the expenses of such arbitration shall be borne by the Education Department.

12. And that the said Publishers will not print or publish nor cause or authorize to be printed or published, nor be in any way accessory to the printing or publishing of any edition or copy or copies of the said book in the United States or anywhere else without the limits of the Province of Ontario, to be sold within the said Province of Ontario.

13. And that the Publishers shall not in any way, without the consent in writing of the Minister of Education acting on behalf of the Education Department, assign any right conferred upon such Publishers by this agreement.

14. And that should any difference of opinion arise between the parties hereto as to the construction to be put upon any of the terms, conditions and agreements herein contained, the same shall, if he consents to determine the same, be determined by the Chancellor of Ontario, after giving the parties hereto an opportunity of presenting their views, in person or by counsel, or if the said Chancellor decline to determine such difference, then at the option of either of the parties hereto, and on the conditions herein contained such matters of difference shall be determined by one of the Judges of Superior Courts, and such determination by the said Chancellor or Judge shall be final and conclusive and binding upon the parties to this Indenture.

15. And that upon the Minister of Education giving to the said parties six months notice, the Education Department may require the alteration of the contents of the said book, and may alter any of the specifications hereinbefore contained, provided the publishing is not thereby made more expensive; but that no change shall be made by the Publishers in the contents of said book, nor any addition thereto, nor any omission therefrom, nor any notes or appendices thereto, nor any other change in the subject matter thereof, without the consent in writing of the said Education Department first had and obtained. The notice hereinbefore provided for may be given by publication thereof in two issues of any newspaper published in the City of Toronto and in the *Ontario Gazette*.

16. And that the Publishers, their successors or assigns shall have the sole right to print and publish within the said Province of Ontario, and Dominion of Canada, the said book.

Provided always, however, that any other Publishers shall have the right of publication at any time after one year from the first of September, 1887, by permission to be obtained from the Department of Education for Ontario, subject to a royalty of ten per cent. on the retail price, as at first issued or afterwards reduced, of each and every copy of said book as long as republished and subject to a proper allowance to cover cost of authorship and other necessary expenses in the preparation of the said books, to be settled as hereinafter provided, and to be paid to the publishers of the first part, or at the option of the Department of Education for Ontario, a sum in gross may be paid in lieu of such royalty, and allowance and expenses, the amount of said allowance and expenses or sum in gross to be settled by the Minister of Education and the publisher of the first part; or at the option of the Minister of Education by three arbitrators, one of whom shall be appointed by the Minister of Education, one by the said party of the First Part, and the third by the publisher desiring the said right of publication; or if more than one publisher applies at the same time for the said right, then the third arbitrator shall be appointed by the publishers so desiring the said right. And in case either or both of the said publishers so concerned shall for ten days after having been notified in writing of the appointment of an arbritrator by the Minister of Education as aforesaid, omit to appoint an arbitrator or to notify the Minister of Education in writing of his appointment, then the Minister of Education may appoint the other arbitrator or arbitrators so omitted to be appointed, and the said arbitration when so finally constituted shall have full power to consider the matters in question, and to examine all statements, vouchers and books furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, and to examine witnesses upon oath; and their decision in the premises or that of any

two of them when given in writing shall be conclusive and binding upon the parties concerned, and the costs, charges and expenses of such arbitration shall fall upon and be borne by the applying publishers so desiring to republish. Provided also that after any arbitration has been held as aforesaid and the rights of the parties concerned have been settled thereby, if any other publisher or publishers should desire the said right of publication, then the Department of Education shall, if they think it proper to accord said right, give instruction as to the manner in which the said questions of the sum in gross or of the royalty should be settled by and between the parties interested therein.

17. And the Publishers hereby agree that if the Publishers or any of them (if more persons than one are of the First Part hereto) deliberately disregard the terms of this agreement, or fail to carry out the same in a matter of substance, the Publisher shall forfeit all his or their rights under this agreement, and the Minister of Education may apply to any Division of the High Court of Justice to restrain the Publishers from further printing, publishing or selling any copies of the said book not in accordance with this agreement.

18. Provided and it is hereby expressly agreed that no edition or copy of the said book shall be printed or published by the Publisher, until the Publisher shall have executed these presents and shall have executed to Her Majesty the Queen a bond in the penal sum of five thousand dollars, with two sureties approved by the Minister of Education, each bound in the sum of two thousand five hundred dollars, conditioned for the due observance and fulfilment by the Publisher of all the terms, conditions, clauses, agreements, obligations and covenants herein contained, and also of the Regulations of the Education Department from time to time in force respecting text-books for use in the Public Schools.

19. It is hereby expressly declared and agreed that the Minister of Education may, on giving the Publishers one year's notice in writing, terminate this agreement, at any time after the expiration of five years from the date hereof, and declare the said book no longer authorized as a text-book for use in the schools of the Province of Ontario, in which case the copyright shall be assigned back by the Minister of Education to the original publisher.

20. Provided also that in case the Publishers or any other person entitled to any right by virtue of this agreement shall assign the same to any other person the right of the Publisher, or such other person shall at the discretion of the Education Department thereupon cease and become forfeit and absolutely at an end.

21. To prevent any possibility of misapprehension, it is hereby expressly declared and agreed that in case there are more persons than one named as *of the First Part* hereto, the breach by any one of such persons of any covenant, term or condition herein contained whether such covenant, term or condition is affirmative or negative, shall be a breach for which all such persons shall be liable.

22. It is understood and agreed between the parties hereto that this agreement is entered into subject to the approval of His Honour the Lieutenant-Governor of the Province of Ontario in Council.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered in the presence of

CHAS. BUILDER,
as to C. P. Co.

H. M. WILKINSON,
as to signature of
Geo. W. Ross.

FOR THE CANADA PUBLISHING CO.
(LIMITED.)

ARTHUR B. LEE,
President. (*Seal.*)

S. G. BEATTY,
Manager.

GEO. W. ROSS. (*Seal.*

GRAMMAR, COMPOSITION AND LITERATURE.

PORT HOPE HIGH SCHOOL,
February 8th, 1886.

Hon. G. W. Ross, LL.B.,
Minister of Education, Toronto.

DEAR SIR,—I have the honour to transmit by this post for your perusal, a revised proof of Part II. of the Public School Grammar. I have spared no pains to make it worthy of your approval, and shall be pleased to learn that I have succeeded.

Mr. Seath was kind enough to give it the benefit of his criticism while in MS., and to read the last revise in galley form. I am sending him by this mail a copy similar to the one now forwarded to you, for he kindly promised to read also the final revise.

I shall be pleased to receive and attend to any remarks or suggestions you may favour me with in regard to the part now submitted.

I may mention that the rest of the book is in the printer's hands, or is ready for him, and that Part III. is well under way, but that the printer is at a stand-still for type till the part now sent for your examination has been electrotyped. Perhaps you will see in this fact a reason for returning this part to the publishers, or to myself, with as little delay as possible.

I have the honour to be,
Your obedient servant,

A. PURSLOW.

EDUCATION DEPARTMENT,
Toronto, 13th February, 1886.

MY DEAR MR. PURSLOW,—I return herewith proof of Part II. of the new grammar. I find you have simplified very much the sub-divisions of both adverb and pronoun, and have in many other respects improved the original draft very much. I have not examined the book with sufficient care to be able to pronounce any opinion upon it. I may say, however, that it meets my views generally much better than it did formerly. Of course you can understand that no matter how soon the book is ready it could not very well be introduced into the schools this term. In view of this fact nothing will be lost by your proceeding with the utmost deliberation. Too much care cannot be taken in the arrangement of the matter, the correction of proofs, and other details.

Yours truly,

G. W. ROSS.

A. PURSLOW, Esq., LL.D.,
Port Hope.

OFFICE OF CANADA PUBLISHING CO. (LIMITED),
26 Front Street, Toronto, April 11th, 1887.

SIR,—We send you herewith for examination, with a view to authorization, copies of two new books just issued, "The Public School Grammar" and "The High School Grammar." As the former contains all that is required on this subject to pass pupils to the High Schools, it would, if suitable for adoption, fill the place of the four elementary grammars now on the list.

We are willing to fix the price of "The Public School Grammar" at 25c., although it is larger by fourteen pages than "Mason's Outlines of English Grammar," now principally used in preparing for entrance to High Schools, and on the authorized list at 45c.

The retail price of "The High School Grammar" is 75c., although it is much larger than "Mason's English Grammar" now authorized, at 75c., and used in the High Schools, or "Whitney's Essentials of English," used in the Provincial Normal Schools, the price of which is $1 25.

You will observe the new High School Grammar contains 416 pages, while Mason's Grammar, the page of which is smaller, contains only 278 pages, and Whitney's only 288 pages.

Your obedient servants,

FOR THE CANADA PUBLISHING CO.,
B.

The Hon. G. W. Ross,
Minister of Education.

TORONTO, 26th February, 1887.

MY DEAR SIR,—I would like to place your new work on "Composition and Practical English," on the list of authorized books for High Schools, and am informed that some slight change in its structure would render it much more useful. Have you seen McElroy's work on the "Structure of English Prose"? Some slight adaptation of your work to the plan of McElroy's is all that is required. You are doubtless aware also that the authorization of the book would involve the surrender of the copyright. Whether you control that or not, I cannot say. Please communicate with me as to the feasibility, first, of re-editing the book on the lines indicated, and secondly, as to the copyright.

Kindly regard this as strictly private.

Yours truly,

GEO. W. ROSS.

W. WILLIAMS, Esq., B.A.,
Collegiate Institute, Collingwood.

COLLINGWOOD, March 1st, 1887.

Hon G. W. Ross,
Toronto.

DEAR SIR,—I was greatly gratified to-day in receiving your letter *re* "Composition," to find that you had not forgotten the matter. I thought that in the wide range of duties that claim your attention, the matter would in all probability escape your memory, and had accordingly made up my mind to call and see you next Saturday, when I expect to be in the city. I was down two weeks ago and would have called but I thought you would be busy about elections. I shall probably meet you in the House on Friday evening, and then may arrange for a few minutes on Saturday, if you can spare the time.

Yours truly,

WM. WILLIAMS.

COLLINGWOOD, March 8th, 1887.

Hon. G. W. Ross,
Toronto.

MY DEAR SIR,—As I was unable to find a copy of McElroy in the city, I in great haste dropped a card to you, asking you to kindly send me your copy, as you so generously offered to do.

It has not yet come to hand, and as it was a terrible storm as I came down Yonge Street on Saturday evening, and as I was in a great hurry lest I should miss the train, I feared that I might have made some mistake about addressing or mailing the card, so thought I would drop this note asking you to send it up. I would like to get to work at once.

Yours respectfully,

WM. WILLIAMS.

COLLINGWOOD, March 21st, 1887.

Hon. G W Ross.

DEAR SIR,—After my interview with you on Saturday, I learned what Mr. Seath thought it would be well to change in the "Composition."

The point in which he thinks it needs improving is the very one I said to you I proposed to change, and the one in which McElroy is so excellent.

The change will affect only a few pages, and will not prevent the present edition and a future one from being used in the same class-room.

Yours truly,

WM. WILLIAMS.

UNIVERSITY OF PENNSYLVANIA, October 24th, 1887.

Hon. GEO. W. Ross,
Toronto, Canada.

MY DEAR SIR,—I should have acknowledged sooner my receipt of the work on composition you so kindly sent me. I have examined it with some care, and am so deeply impressed with its usefulness in elementary teaching, that I should be glad to see it on sale here. Boys in their last year at school need just such practical training in expression as Mr. Williams' book offers. Cannot Mr. Williams secure the issue of a limited United States edition?

Thanking you for your thoughtfulness in sending me the book.

I am, yours truly,

JNO. G. R. McELROY.

TORONTO, October 29th, 1887.

MY DEAR SIR,—In some of the correspon lence which I had with Mr. McElroy, author of "Structure of English Prose," I took the liberty of referring to your book as the production of a Canadian author, and, at the same time, forwarded him a copy for his perusal. Herewith, please find his reply. His suggestion might be worth considering.

Please return letter.

Yours truly,

GEO. W. ROSS.

W. WILLIAMS, Esq., B.A.,
Collingwood.

EDUCATION DEPARTMENT.
TORONTO, January 6th, 1888.

GENTLEMEN,—Will you please mention if the 1887 edition of "Williams' Composition" is yet published, and if not, when it will be issued. There are urgent inquiries for the book.

Your obedient servant,

ALEXANDER MARLING
Secretary.

THE CANADA PUBLISHING CO.,
Toronto.

TORONTO, January 7th, 1888.

ALEX. MARLING, Esq., M.A.,
Secretary Education Department.

DEAR SIR,—In reply to your inquiry we beg to inform you that the revised edition of "Williams' Composition" was published last September, and copies sent to the Education Department.

The inquiries you allude to no doubt arise from the fact that "Authorized etc." was not printed on the book. This we could not do without the Minister's sanction.

The book was copyrighted in 1885, and as this date appeared in the registration clause printed in the book, so teachers mistook it for the old edition.

Yours truly,

FOR THE CANADA PUBLISHING CO. (LIMITED)
B.

TORONTO, February 4th, 1888.

GENTLEMEN,—I understand you propose publishing an edition for the United States, of Williams' "Composition." I am delighted to know that the production of a Canadian author has been so well received. It would be exceedingly useful to me, if you could send me the report of those gentlemen to whom the book was referred for examination.

Hoping you will be able to comply with this request

I remain, yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Boston.

BOSTON, Mass., February 8th, 1888.

GEO. W. ROSS,
Minister of Education,
Toronto, Canada.

DEAR SIR,—Yours of the 4th received. We propose publishing an edition of Mr. Williams' book, as you suggest. We shall also publish Mr. Strang's book on False Syntax, Mr. Fraser's Souvestre, and probably two other Canadian books. I am sorry we cannot send you the reports of the gentlemen to whom the book was referred for examination, as it would be a breach of confidence on our part, the information concerning it being given us in strict confidence.

We judge from your letter that you are still considering the addition of books to your list. We should, therefore, be glad to have you consider some books from our list. As you can readily understand, we felt very much disappointed that the German Grammar and Chemistry were not taken finally, and now the more so that the Canadian Chemistry has drawn so largly from our book. Your German Grammar we have not seen ; but we shall examine it with interest when it appears.

Respectfully yours,

D. C. HEATH & CO.

COLLINGWOOD, February 18th, 1888.

Hon. GEO. W. ROSS,
Minister of Education.

SIR,—Mr. Beatty, of the Canada Publishing Co., writes to say that he has not yet received your permission to make the alterations in the "Composition." Will you kindly forward it as soon as convenient to the American publishers, with the plates as soon as possible.

Yours, etc.,

WM. WILLIAMS.

TORONTO, February 20th, 1888.

MY DEAR SIR,—I remember that you pointed out some alterations which the American publishers desired to have made in the *American* edition of your "Composition." I was not aware that it was intended that the alterations indicated should apply to the Canadian edition and, therrefore, did not charge my memory either with the nature or the extent of them. Before I could consent, therefore, to the alterations in the plates to be used in the Canadian edition, I would like you to send me a copy "marked" for examination. If they are extensive they could not be concurred in, as it would be merely a repetition of the old practice of dropping out one edition of a work by adding a few pages of extra matter in another edition. Is there any objection to a slightly different edition being used in the United States.

Yours truly,

GEO. W. ROSS.

W. WILLIAMS, Esq., B.A.,
Collingwood.

COLLINGWOOD, February 23rd, 1888.

Hon. G. W. ROSS,
Minister of Education

DEAR SIR,—In reply to yours of the 20th instant *re* changes in composition, when I bring the matter to your recollection I feel sure you will remember that I had a copy of the "composition" with me when I called on you, and that I showed you a number of the alterations, explaining that almost all of them were mere verbal changes, correction of typographical errors, and two or three other little oversights that were made in the hurry to get up the last edition in August. On looking over them you said that it was all right, to go on with them and that you would send the written permission to Mr. Beatty.

There are not many changes and not one of them will in any way prevent the present edition and the corrected one from being used in the same class. It is no new edition. By-the-bye you remarked to me that it would be well to say nothing of the changes.

Mr. Beatty has the only marked copy, and if you think it worth while I will write to him and have it sent you for further examination; but really the changes or corrections are so trifling that I am sure you will not think it necessary. The special changes for the American edition have of course nothing to do with the Canadian.

Yours, etc.,

WM. WILLIAMS.

TORONTO, 27th February, 1888.

MY DEAR SIR,—Mr. Williams writes for permission to make certain verbal and typographical alterations in the plates of his High School Composition. I am quite willing that such alterations be made, so long as they are limited as indicated.

I understand the alterations for the American edition are somewhat extensive. Will you kindly see that in the Canadian edition, the American plates are not used.

Yours truly,

GEO. W. ROSS.

SAMUEL J. BEATTY, Esq.,
Manager Canada Publishing Co., Toronto.

TORONTO, 8th September, 1887

MY DEAR SIR,—Under the new regulations it is proposed to issue an edition of the literature text for second class certificates annotated under the direction of the Department. These will require to be ready for the printer as near the New Year as may be. I have many reasons which I need not mention, why I would like you to assume the editorial duties so far as the poetry is concerned. An arrangement for the prose I have already made. If you mention the sum which you think you ought to be paid for such service I shall arrange for the publication of the texts and see that the amount is paid by the publisher. An early reply will oblige.

Yours truly,

GEO. W. ROSS

JAMES WETHERELL, Esq., B.A.,
Strathroy.

STRATHROY, September 12th, 1887.

The Hon. G. W. Ross.

DEAR SIR,—I am in receipt of your favor of the 8th. I thank you for the honour you do me in assuming that I am competent to edit "The Lay." Had you asked me to edit one of the ancient classics, I should have undertaken it *con amore*, but to annotate with precision and taste one of the finest poems of the "Wizard of the North," I feel myself incompetent. However, if you can give me till February or March, I shall endeavour to steep myself in the spirit of old romance before going to work. My beau-ideal of a literature text book is, I fear, beyond my reach, but if you are willing to trust me I shall "stretch out lame hands" towards it.

In the way of remuneration, I think I should have two hundred dollars ($200).

I hope you will determine to have the poetry and the prose published in separate volumes. I think it a literary sin to serve up the soup with the solids. If the poetry and the prose are to be published together I should like to know the name of my coadjutor.

Is the editor's name to appear on the title page, or will you allow him to shelter himself behind the battlements of the Department?

What are the directions of the Department with regard to the nature and the extent of the annotating, or is the editor to have *carte blanche*?

Yours, etc.,

J. E. WETHERELL.

TORONTO, 13th September, 1887.

MY DEAR SIR,—It is intended that T. C. L. Armstrong should edit the prose selections; and for economical reasons, I think it desirable that the two books should be bound together. I have not quite decided whether the names of the editors should appear on the title page; that is a matter for subsequent decision. The intention of the Department is to annotate pretty fully as much of the literature as will be necessary to indicate to the teacher the kind of literary criticisms which would be most profitable to his pupils; as to the remainder of the work the annotations to be limited to such matters as would save references on the part of the teacher. I cannot decide positively in regard to the remuneration until I see the publisher who is to be entrusted with the publication of the work.

Yours truly,

GEO. W. ROSS.

J. E. WETHERELL, Esq., B.A.,
Strathroy.

TORONTO, 19th September, 1887.

MY DEAR MR. ARMSTRONG,—I am about getting the literature for 1888-9 annotated under the regulation which gives the Department control in this matter. Mr. Wetherell, of Strathroy, is asked to annotate the poetry. I would like to get the benefit of your skill and experience in annotating the prose. Kindly let me know if you could undertake this work; have it ready before the 1st January, and on what terms. The Department will arrange with a publisher who will pay whatever sum is found to be fair compensation for the work done.

Yours truly,

GEO. W. ROSS.

T. C. L. ARMSTRONG, Esq., LL.B.,
Toronto.

TORONTO, September 28th, 1887.

MY DEAR MR. ROSS,—I have delayed answering your note *re* the annotations of prose work for 1887, till I could look over the work.

In reply to your suggestion I will undertake to do the work of
and preparing it; but as the work is long and the responsibility of preparing a book
hat is to have the of the Department is greater than of a more private
ature, and will therefore require more careful thought, I think I should charge $200 or
250 for my services.

Any publisher will, I think, readily give this sum, since he will have the exclusive right of publication.

Yours truly,

T. C. L. ARMSTRONG.

The Hon. G. W. Ross,
Education Department.

TORONTO, 10th October, 1887.

MY DEAR SIR,—As you are, no doubt, engaged in annotating the literature for 1888-9, I think it well to make a few suggestions which may be useful.

(1) Although you are specially charged with the annotation of the prose, it would be desirable to have consultation, either by letter or personally, with Mr. Wetherell, who is engaged annotating the poetry. In a certain sense you are to be held jointly and severally responsible for the whole work.

(2) That only such assistance should be given by way of historical sidelights and references to proper names, as would be absolutely necessary. The notes should, in many cases, be suggestive to the teacher, as in the Public School geography.

(3) That the "outline hints" appended, which have been accepted by the University as the basis of the examination papers, should be followed strictly. It is intended to prefix this outline to the annotated book.

(4) In order to save exposition, reference should be made to Williams' "High School Composition" and Mr. McElroy, on the "Structure of English Prose."

(5) The usual biographical sketch of the author should preface each section of the book.

I have not been able to fix absolutely with the publishers the remuneration, but hope to do so in a few days. I would like to place the book upon the market about the 1st of January next. Manuscripts, therefore, should be ready before the 1st of December, at the latest.

Yours truly,

GEO. W. ROSS.

T. C. L. ARMSTRONG, Esq., LL.B.,
Toronto.

TORONTO, October 10th, 1887.

MY DEAR SIR,—As you are, no doubt, engaged in annotating the literature for 1888-9. I think it well to make a few suggestions which may be useful.

(1) Although you are specially charged with the annotation of the poetry, it would be desirable to have consultation, either by letter or personally, with Mr. T. C. L. Armstrong of this city, who is engaged in annotating the prose. In a certain sense you are to be held jointly and severally responsible for the whole work.

(2) That only such assistance should be given in the way of historical sidelights and references to proper names as would be absolutely necessary. The notes should in many cases be suggestive to the teacher, as in the Public School geography.

(3) That the "outline hints" appended, which have been accepted by the University as the basis of the examination papers should be followed strictly. It is intended to prefix this outline to the annotated book.

(4) In order to save exposition reference should be made to Williams' "High School Composition" and McElroy on the "Structure of English Prose."

(5) The usual biographical sketch of the author should preface each section of the work.

I have not been able to fix absolutely with the publishers the remuneration, but hope to do so in a few days. I would like to place the book upon the market about the 1st of January next. Manuscripts, therefore, should be ready before the 1st of December at the latest.

Yours truly,

GEO. W. ROSS.

J. E. WETHERELL, Esq., B.A.,
Training Institution,
Strathroy.

STRATHROY, October 12th, 1887.

Hon. G. W. Ross.

DEAR SIR,—I have received yours of the 10th October. In respect to the time which you allow me for annotation, I would call your attention—

(1) To yours of 8th of September in which you name the new year as *the date for sending MSS to the printer.*

(2) To mine of 10th September in which I name February or March as the date which I prefer,—a date to which you make no objection in yours of the 13th September. During the month that has intervened I have, of course, taken it for granted that you had agreed to my proposal as regards time. Had the 1st of December been named in your first communication I should have been obliged to decline the task on account of insufficient time. Now that I have gone to considerable expense in collecting materials and have devoted a whole month's leisure to laborious preparatory work. I trust you will not find it necessary to force me to decline the further pursuit of the task.

I am quite willing to follow the prescribed outline which you send me, but I am not willing to become responsible for the work of Mr. Armstrong, nor do I wish him to be in any way responsible for mine. I shall be happy to allow Mr. Seath or Mr. Hodgson to read my proof and to make *suggestions*, but I am as loath to share with another the editorial control of my department of the work as I should be to allow another to share with me my Head Master's chair.

You will not misunderstand me. I do not reflect at all on Mr. Armstrong's scholarship. Were he the most competent man in the country I should still have my present feeling in the matter. If it is a *sine qua non* that the names of both editors appear on the title page of each section of the work as jointly responsible you will kindly let me know at once. My own sins are sufficient for my weak shoulders to carry.

I am very sorry that your instructions of September 13th did not contain all the limitations and restrictions of your later communication.

When you write me *re* remuneration I hope you will find it possible to clear away the two obstacles that lie in my path.

Yours, etc.,

J. E. WETHERELL.

TORONTO, October 18th, 1887.

MY DEAR SIR,—In reply to your favour of the 12th instant, I beg to state that it is considered desirable to have the notes available for High School purposes as early in the new year as possible, as some teachers might wish to organize their classes with a view to examinations some distance ahead. I am quite sure you will do your utmost to carry out this intention, and two or three weeks one way or the other will be of no inconvenience I trust to either of us. It is not intended that you should be responsible for Mr. Armstrong's work. It will be of advantage however, as the annotations are to a certain extent expository of the literature, that there should be no discrepancies between the theories

laid down by the different editors. I think Mr. Armstrong will be glad to take suggestions from you. I hope you will not consider it *infra dig.* to receive suggestions from him. It is not intended that the names of either of the editors should appear on the title page. My negotiations with the publishers are not quite closed. I am sorry therefore that I cannot answer positively in regard to remuneration.

Yours truly,

G. W. ROSS.

J. E. WETHERELL, Esq., B. A.,
Strathroy.

TORONTO, December 29th 1887.

Hon. G. W. Ross.

DEAR SIR,—My MSS of notes on the "Lay" are nearly ready for the printer. Mr. Seath has read my critical notes and approves of them. I am now getting the explanatory notes into form and will have them ready in a few days. The introductions I cannot have ready till January 15th, but in the meantime the printers might be at work. Mr. Seath has kindly consented to read the rest of my work when it is finished.

My explanatory notes will occupy about 25 octavo pages; the critical chapter about 15 pages; and the introduction under 10 pages.

I should like to have all the proofs sent to me for correction, as I may desire to revise my work in minor details.

My notes have been written on the text as it appears in Philpott's edition, so that the printer should have that edition in his hands, I have an extra copy which I can send down. To whom shall I send copy?

Yours, &c.,

J. E. WETHERELL.

TORONTO, January 7th, 1888.

MY DEAR SIR,—Be good enough to send me the MSS of your notes, also Philpott's edition of the "Lay," in order that I might place it in the printers' hands. The best arrangement that I can make with our publisher is to pay you one hundred and seventy-five dollars which you will receive from him in due time

Yours truly,

G. W. ROSS.

J. E. WETHERELL, Esq., B,A.,
Strathroy.

STRATHROY, January 10th, 1888.

Hon. G. W. Ross.

DEAR SIR,—I send you by this mail the MSS of the notes and Philpott's edition of the "Lay." The critical introduction and critical notes, together with the prefatory matter, I shall try to have ready very soon.

I should like to read the printer's proofs throughout. It may be necessary also to have one or two revises. Kindly have the printers' furnish me with two or three copies of all proofs and revises as I am to have assistance in the work of revision.

If the printers wish to page the text and notes before I have the introductory matter completed I can give them a pretty accurate estimate of the number of pages I shall need for this introductory work, or they can use Roman numerals for the early pages.

Yours, &c.,

J. E. WETHERELL,

TORONTO, January, 20th 1888.

Hon. G. W. ROSS,
City.

DEAR SIR,—We will undertake to publish your proposed volume, second class literature, at a retail price of 50 cents. The book to contain 220 pages, similar in size to those of High School Reader, and we will pay for the literary work as arranged by you.

Yours, &c.,

ROSE PUBLISHING CO.,
DAN. H. ROSE
Manager.

TORONTO, January, 24th 1888.

DEAR SIRS,—I send you herewith by messenger the MSS of the volume of second class literature which you undertake to publish at 50cts. as per your letter of the 20th inst. The amount to be paid the editors is $350. Two separate cheques of $175 each, you will please send me at your convenience.

Yours truly,
GEO. W. ROSS.

THE ROSE PUBLISHING CO.,
Toronto.

TORONTO, 24th January, 1888.

MY DEAR SIR,—Please send me the MSS of the second class literature, and oblige,

Yours truly,
GEO. W. ROSS.

T. C. L. ARMSTRONG, Esq., LL.B.,
Toronto.

TORONTO, 31st January, 1888.

MY DEAR SIR,—Herewith find the balance of the MSS of the new volume of annotations. The proofs must be read by the author very carefully.

Yours. truly,
GEO. W. ROSS.

DAN. ROSE, Esq.,
Rose Publishing Co., Toronto.

TORONTO, 31st January, 1888

MY DEAR SIR,—Herewith find letter and map from Mr. Wetherell. Please consider what he has requested, and have it done if possible.

Yours truly,
GEO. W. ROSS.

DAN. ROSE, Esq.,
Rose Publishing Co., Toronto.

TORONTO, 11th February, 1888.

MY DEAR SIR,—See Wetherell's letter herewith. I hope you are pushing the work as fast as possible.

Yours truly,

GEO. W. ROSS.

DAN. ROSE, Esq.,
Rose Publishing Co., Toronto.

TORONTO, 13th February, 1888.

MY DEAR SIR,—Herewith find cheque for literature annotations. Proofs will be sent you as requested.

Yours. truly,

GEO. W. ROSS.

J. E. WETHERELL, Esq., B.A.,
Strathroy.

STRATHROY, February 18th, 1888.

Hon. G. W. Ross.

DEAR SIR,—Your cheque for one hundred and seventy-five dollars was duly received. I do not feel that the remuneration is adequate to the work that I have done, but I shall not complain. I acknowledge your kindness in forwarding the cheque much sooner than I had expected it.

Yours, etc.,

J. E. WETHERELL.

P.S.—Is the map to go in the book? If not I shall have to make some alterations in my notes.

J. E. W.

STRATHROY, February 20th, 1888.

Hon. G. W. Ross.

DEAR SIR,—I send by this mail the copy of biographical notice, etc., for the "Lay."

Yours, etc.,

J. E. WETHERELL.

TORONTO, 20th February, 1888.

MY DEAR SIR,—The map is being engraved for the annotations.

Yours, etc.,

GEO. W. ROSS.

J. E. WETHERELL, Esq., B.A.,
Strathroy.

University of Pennsylvania, September 16th, 1887.

Hon. Geo. W. Ross,
Minister of Education,
Toronto, Canada.

My Dear Sir,—On my return from a short trip to Europe I learn from my publishers, Messrs. A. C. Armstrong & Son, New York, that you have adopted my *Structure of English Prose* as the text-book in Rhetoric in the schools under your care. The news is of course most welcome to me, and I beg leave to offer you my sincere thanks for your kindness in considering my book so favourably.

If I am not asking too much may I not beg you, when you have further knowledge of the book, to favor me with a written opinion of it? Any such communication to me I should consider absolutely confidential unless indeed you consented to my publishers' using extracts from it in advertizing the work. My chief object in asking for such an expression of your views is that I may have the valuable aid your judgment will give me in revising the book as new editions may be called for.

Believe me,
My dear Sir,
Your obedient servant,

JNO. G. R. McELROY.

Toronto, 19th September, 1887.

My Dear Sir,—The "Structure of English Prose" was placed on our authorized list, as being not only original in its method of treatment, but in harmony with the views of the best educators in this Province on the subject of Rhetoric. Although accepted by the Department, it has come so recently into use that I cannot say how far it will prove satisfactory to the profession, but I have no anxiety with regard to the matter. I may be able in the course of a year to give you information on this subject, which I may fairly anticipate will be gratifying. I might add that while I am quite willing to inform you personally as to the opinions entertained of your book by our best teachers, I will be under the necessity of asking you not to use my name officially in any sense. This is the inflexible rule of my Department on this matter. I send you a copy of a more elementary work on English Composition for our junior classes, prepared by one of our teachers.

Yours truly,
GEO. W. ROSS.

John G. R. McElroy, Esq.,
University of Pennsylvania,
Philadelphia.

Toronto, 16th January, 1888.

Gentlemen,—Several complaints have reached me in regard to the binding of McElroy's 'Structure of English Prose.' It is said to be very imperfectly bound. What have you to say about it?

You were to send me cost and size of annotations.

Yours truly,
GEO. W. ROSS.

Messrs. Hunter, Rose & Co.,
Toronto.

THIS INDENTURE made in duplicate this twenty-fourth day of June, in the year of Our Lord one thousand eight hundred and eighty-seven,

Between

The Canada Publishing Company (Limited) hereinafter called the Publishers, of the first part,

and

Her Majesty the Queen, represented herein by the Honorable the Minister of Education for the Province of Ontario, acting for the Education Department of Ontario, of the second part.

Whereas the Publishers have made application to the Education Department of the Province of Ontario for the right to print and publish the Public School Grammar and Elements of Composition; with numerous exercises for use in the first four forms of the Public Schools of Ontario.

And whereas the said Department of Education has approved of such application, and has agreed to grant the said Publishers the right to print and publish the said Public School Grammar and Elements of Composition hereinafter called the BOOK, subject to the covenants and conditions hereinafter contained, and to the terms and conditions of the regulations in that behalf of the said Department of Education.

Now therefore this Indenture Witnesseth, [that in consideration of the premises and of the sum of One Dollar of lawful money of Canada, the receipt whereof is hereby acknowledged, the said Publishers do hereby covenant with Her Majesty the Queen, her successors and assigns in manner following, that is to say:

1. That the Publishers shall from time to time and at all times, observe, perform and fulfil in respect of the said book each and every of the terms and conditions of the regulations of the said Education Department respecting the printing and publication of text books, and also the terms and conditions hereinafter contained, and that each and every copy of each and every edition of the said book for use in the Province of Ontario shall in every particular be printed and published by the Publishers in strict conformity therewith.

2. And that the Publishers shall submit or cause to be submitted to the said Education Department sample copies of each and every edition of the said book to be hereafter printed and published, for sale or use in the Province of Ontario, for the approval of such Department as to the mechanical execution of the presswork, binding and all other mechanical parts of the work, and that without such approval having been first had and obtained, no copy of any edition thereof shall be sold or disposed of for use in the said Province of Ontario. And furthermore, in order to avoid causing any loss to the said Publishers arising from, or liable to arise from, any edition of the said book not being approved of by the Education Department, owing to any serious defect or defects in any edition, and on that account condemned by the Education Department, and forbidden to be sold or issued to the schools or to the public, and also to more effectually protect the public, the said Publishers shall submit or cause to be submitted to the Education Department for examination sample sheets of the different forms of the book about to be printed, and specimens of the ink, paper, millboard, strawboard, cloth, mull, tapes, and other materials proposed to be used by said Publishers in the printing and construction of the said book, together with a statement of the prices, weight, size, and other particulars necessary to judge of the relative quality of the different materials used or proposed to be used; and the approval of the Education Department shall, before any work is proceeded with, be obtained in regard to the quality of the printing, and of the paper, and other material proposed to be used. And furthermore, after sanction has been given to the using of such material, or of such printing, presswork and binding, two sample copies at least of the book shall be submitted by said Publishers bound and finished in all respects *as proposed to be issued* by the said Publishers, and that without such approval first had and obtained, no work in regard to binding said book shall be proceeded with.

3. And that the paper to be used in each and every edition of the said book, and every copy thereof for use in the Province of Ontario shall be equal in quality to the sample prescribed by the said Education Department, to wit, of good quality, sixty-six pounds to the ream of 500 sheets, measuring thirty inches by forty inches, of good color and texture, and super calendered, or of such increased weight and improved quality as may be required by the Education Department, provided the cost of the same shall not exceed the cost of the sample herein prescribed, and no inferior quality of paper shall under any pretext whatsoever be used. The presswork and ink shall be first-class throughout, and shall be such as to produce together with the plates a clear and distinct impression ; and the stitching and binding of each and every edition of the said book, and the material used therein shall be equal to the sample submitted to and approved of by the Education Department as aforesaid, to wit, to be full bound in cloth, with stiff covers, embossed on first and last pages; the title on first page stamped in black ; sections to be 16 pages each and each section to be sewed with wire or thread, at option of the party of the Second Part on three strong tapes each tape to be one and one-quarter inches wide. Stitches and tapes on back of book to be covered with fine, strong, evenly made mull extending to within one-half inch from top and bottom of books, and overlapping one inch on each side, over the mull a strong piece of paper to be glued. Both tapes and mull to be glued to cover. End papers to to be of same quality as book and pasted on separately from first and last sections. Straw-board for covers to be equal to sample copy submitted. Cloth for covers to be extra finished and twilled, as per sample submitted. Each and every part of the binding to be thoroughly done and durable and no departure from such specifications shall be made without the sanction of the Education Department. And no copy of the said book which does not in all particulars comply with the foregoing provisions in regard to paper, presswork, typography, ink and binding shall be sold or disposed of for use in the Province of Ontario.

4. And that the said sample copies to be furnished as hereinbefore provided for shall remain on file in the said Education Department, and each and every copy of each and every edition published, shall in all respects be equal to the sample copy so furnished to and on file in the said Department.

5. And that in case the Minister of Education points out to the said publishers any defect or defects in the sample copies furnished to the said Department as aforesaid, but not deemed by him of sufficient importance to cause him to withhold his approval from such edition, then in such case the said Publisher shall in the next following edition or issue to that in which said defect shall have been pointed out, correct the same to the satisfaction of the said Department, but in case serious defects are pointed out by the Minister of Education to the Publishers in any edition published by said Publishers, and in case such edition is condemned by the Minister of Education as unfit for use in the schools or for sale to the public, the condemned edition shall be withdrawn from sale for use in the Province of Ontario, and shall, if required by the Minister of Education, be delivered by the said Publisher into the custody of the Education Department, unless an arrangement satisfactory to the Minister be made for culling out any defective portion or portions, or the matter is in some other way adjusted.

6. And that the said book shall be of the size following, that is to say: seven and one-eighth inches, by four and seven-eighth inches, and shall consist of one hundred and eighty-four pages inclusive of end papers and covers ; each page of each and every book to have proper margin. And that the said book shall be sold at retail prices not exceeding the following : that is to say, the sum of twenty-five cents per copy.

7. And that in order it may be the more easily recognized and ascertained that each and every copy of each and every edition of the said book to be published and in use in the said Province of Ontario is not only authorized but approved as to its mechanical execution, contents, and otherwise, by the said Education Department, the Publishers shall cause to be printed upon the title page of each and every copy of each and every edition of the said book the name of the firm by which such book is published, and the words "*Authorized by the Education Department for Ontario*," or words to that effect, or shall place upon the title page or cover of each copy of the said book the official stamp of the Education Department.

8. And that the retail price of each and every copy of each and every edition of the said book shall be printed on the cover or title page thereof. No advertisements of any kind shall appear in any of the said books, or upon the covers of the said books, except such as are approved by the Education Department.

9. And that for the better securing the retail sale of the said book at a price not exceeding that above set forth as the maximum retail price, the Publishers shall make the sale to any purchaser buying quantities of such book of one dozen and upwards at any time at prices at least twenty-five per cent. lower than the said prescribed retail prices on the usual terms of sale, and that to purchasers of the said book in lots of the said value of thirty-six dollars, computed at the said *retail* prices, the said Publishers shall make a further reduction of five per cent. in the price thereof, and in lots of the sale value of one hundred and twenty-five dollars, computed at the said *retail* prices, the said Publishers shall make a further reduction of five per cent. in the price thereof, and that the said Publishers shall and will from time to time and at all times keep on hand a sufficient quantity of copies of the said book to supply all demands of the public and trade therefor.

10. And that the Minister of Education, or any person by him appointed in writing for that purpose, shall and may from time to time and at any time during business hours enter the warehouse and all other business premises or any part thereof of the Publishers, for the purpose of inspecting any and every edition or issue of such authorized book and every copy thereof, and shall have a right to take sample sheets or other samples of material or sample copies of said books for the purpose of examination, whenever he thinks proper so to do.

11. And that in case the said Education Department shall at any time consider that the retail price heretofore mentioned of the said book should be reduced, the Minister of Education and said Publishers may arrange, at the option of the Minister of Education, a reduced retail price and scale of discounts, or the Minister of Education shall appoint an arbitrator, the Publishers shall appoint another, and the Chancellor of Ontario upon the application of the Minister of Education or of the Publishers, or the joint application of all parties hereto, shall appoint a third, and in case the Publishers shall for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education omit to appoint an arbitrator, or to notify the Minister of Education in writing of the appointment, then the Chancellor of Ontario may name two arbitrators to act with the arbitrator appointed by the Minister of Education ; and the Publishers shall at any time and at all times when called upon so to do by the arbitrators or any two of them furnish the arbitrators with a detailed statement showing the cost of production and the returns of the sales of any or all copies of the said book, and shall in addition if so requested furnish the said arbitrators or any two of them for inspection all the vouchers and books which in any way refer to or contain any entry concerning the cost of production and returns of the sales of the said book, and that if it shall be deemed by the said arbitrators or any two of them that an excessive profit is being made by the said Publishers upon the sale of the said book the retail prices of the same shall be reduced to amounts which the said arbitrators or any two of them shall deem sufficient to yield a reasonable profit to the said parties, and such arbitrators or any two of them shall upon such appointment have full power to consider the question or questions submitted to them and to examine all statements, vouchers and books furnished by the said parties and full power to compel the production of such additional statements, vouchers and books to those furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, with power to examine witnesses upon oath, and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties hereto, and the retail price or prices so fixed shall thenceforward govern the price or prices by the dozen and other wholesale prices as hereinbefore provided for. Provided that the change in prices aforesaid shall not take effect until six months after notice has been given for the appointment of arbitrators as aforesaid, and provided also that the expense of such arbitration shall be borne by the Education Department.

12. And that the said Publishers will not print or publish, nor cause or authorize to be printed or published, nor be in any way accessory to the printing or publishing of any

edition or copy or copies of the said book in the United States or anywhere else without the limits of the Province of Ontario, to be sold within the said Province of Ontario.

13. And that the Publishers shall not in any way, without the consent in writing of the Minister of Education acting on behalf of the Education Department, assign any right conferred upon such Publishers by this agreement.

14. And that should any difference of opinion arise between the parties hereto as to the construction to be put upon any of the terms, conditions and agreements herein contained, the same shall, if he consents to determine the same, be determined by the Chancellor of Ontario, after giving the parties hereto an opportunity of presenting their views, in person or by counsel, or if the said Chancellor decline to determine such difference, then at the option of either of the parties hereto, and on the conditions herein contained such matters of difference shall be determined by one of the Judges of the Superior Courts, and such determination by the said Chancellor or Judge shall be final and conclusive and binding upon the parties to this Indenture.

15. And that upon the Minister of Education giving to the said parties six months' notice, the Education Department may require the alteration of the contents of the said book, and may alter any of the specifications hereinbefore contained, provided the publishing is not thereby made more expensive; but that no change shall be made by the Publisher in the contents of the said book, nor any addition thereto, nor any omission therefrom, nor any notes or appendices thereto, nor any other change in the subject matter thereof, without the consent in writing of the said Education Department first had and obtained. The notice hereinbefore provided for may be given by publication thereof in two issues of any newspaper published in the City of Toronto and in the *Ontario Gazette*.

16. And that the publishers, their successors or assigns shall have the sole right to print and publish within the said Province of Ontario, and Dominion of Canada the said book.

Provided always, however, that any other publisher shall have the right of publication at any time after one year from the first day of September, 1887, by permission to be obtained from the Department of Education for Ontario, subject to a royalty of ten per cent. on the retail price, as at first issued or afterwards reduced, of each and every copy of said book as long as republished and subject to a proper allowance to cover cost of authorship and other necessary expenses in the preparation of the said books, to be settled as hereinafter provided, and to be paid to the publishers of the First Part, or at the option of the Department of Education for Ontario a sum in gross may be paid in lieu of such royalty, and allowance and expenses, the amount of such allowance and expenses or sum in gross to be settled by the Minister of Education and the publishers of the first part; or at the option of the Minister of Education by three arbitrators, one of whom shall be appointed by the Minister of Education, one by the said party of the First Part, and the third by the publisher desiring the said right of publication; or if more than one publisher applies at the same time for the said right, then the third arbitrator shall be appointed by the publishers so desiring the said right. And in case either or both of the said publishers so concerned shall for ten days after having been notified in writing of the appointment of an arbitrator by the Minister of Education as aforesaid, omit to appoint an arbitrator or to notify the Minister of Education in writing of his appointment, then the Minister of Education may appoint the other arbitrator or arbitrators so omitted to be appointed, and the said arbitration when so finally constituted shall have full power to consider the matters in question, and to examine all statements, vouchers and books furnished by the said parties, and the evidence of any kind whatsoever which they shall deem necessary, and to examine witnesses upon oath; and their decision in the premises or that of any two of them when given in writing shall be conclusive and binding upon the parties concerned, and the costs, charges and expenses of such arbitration shall fall upon and be borne by the applying publishers so desiring to republish. Provided also that after any arbitration has been held as aforesaid and the rights of the parties concerned have been settled thereby, if any other publisher or publishers should desire the right of publication, then the Department of Education shall, if they think it proper to accord said right, give instruction as to the manner in which the said questions of the sum in gross or of the royalty should be settled by and between the parties interested therein.

17. And the Publishers hereby agree that if the Publisher or any of them (if more persons than one are of the First Part hereto) deliberately disregard the terms of this agreement, or fail to carry out the same in a matter of substance, the Publisher shall forfeit all his or their rights under this agreement, and the Minister of Education may apply to any Division of the High Court of Justice to restrain the Publisher from further printing, publishing or selling any copies of the said book not in accordance with this agreement.

18. Provided and it is hereby expressly agreed that no edition or copy of the said book shall be printed or published by the Publishers until the Publishers shall have executed these presents and shall have executed to Her Majesty the Queen a bond in the penal sum of five thousand dollars, with two sureties approved by the Minister of Education, each bound in the sum of two thousand five-hundred dollars, conditioned for the due observance and fulfilment by the Publishers of all the terms, conditions, clauses, agreements, obligations and covenants herein contained, and also of the regulations of the Education Department from time to time in force respecting text-books for use in the Public Schools.

19. It is hereby expressly declared and agreed that the Minister of Education may, on giving the Publishers one year's notice in writing, terminate this agreement at any time after the expiration of five years from the date hereof, and declare the said book no longer authorized as a text-book for use in the schools of the Province of Ontario, in which case the copyright shall be assigned back by the Minister of Education to the original publisher.

20. Provided also that in case the Publisher or any other person entitled to any right by virtue of this agreement shall assign the same to any other person the right of the Publisher or such other person shall at the discretion of the Education Department thereupon cease and become forfeit and absolutely at an end.

21. To prevent any possibility of misapprehension, it is hereby expressly declared and agreed that in case there are more persons than one named as *of the First Part* hereto, the breach by any one of such persons of any covenant, term or condition herein contained, whether such covenant, term or condition is affirmative or negative, shall be a breach for which all such persons shall be liable.

22. It is understood and agreed between the parties hereto that this agreement is entered into subject to the approval of His Honor the Lieutenant-Governor of the Province of Ontario in Council.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered in the Presence of

CHAS. BUILDER, as to C. P. Co.

H. M. WILKINSON, as to signature of G. W. Ross

FOR THE CANADA PUBLISHING CO., (LIMITED.)

ARTHUR B. LEE, President. *(Seal.)*

S. G. BEATTY, Manager.

G. W. ROSS. *(Seal.)*

HISTORY.

TORONTO, 26th August, 1885.

MY DEAR SIR,—When I had the pleasure of visiting you last May, you told me that your daughter was preparing a work in history, on lines that would enable the subject to be taught more readily than it has been heretofore. As I am now considering the authorization of a history for Ontario, I would like very much to get a copy of your daughter's work. It might be of service to me in laying before our teachers such methods of study as would be most profitable to them.

Yours truly,

GEO. W. ROSS.

EDWARD A. SHELDON, Esq., A.M., Ph.D.
Principal Normal School,
Oswego, N.Y.

TORONTO, 26th October, 1885.

SIRS,—I am much obliged for your copy of the advanced sheets of Miss Sheldon's work on history. I have pursued the work with very much pleasure; but as the course of historical research which it covers is much more extensive than the one followed in our Canadian schools, I do not see my way clear to authorize it. No doubt many teachers will avail themselves of its methods. I think it would be well for you to advertise it extensively in Ontario.

Yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Publishers, 3 Tremont Place, Boston.

BOSTON, January 7th, 1886.

Hon. GEO. W. ROSS,
Toronto, Ont.

DEAR SIR,—In sending you Miss Sheldon's history, we forget to say, perhaps, that a teacher's edition of 105 p.p. is being made, which will contain summaries of all the results expected to be attained by the student's work, together with suggestions as to classroom method, topics for examination, essay work and more general views of the subject than can be given in the student's edition. This teacher's edition will be ready in two months, at which time we shall take pleasure in sending a copy to you.

We are daily in receipt of strong letters from our best educators, saying that it is sure to work a much needed change in the teaching of history, it being the most suggestive work on the subject issued in this generation. Alexander Johnston, Professor of History at Princeton College, the author of a recent book on U.S. history, published by Henry Holt & Co., of New York, writes to-day: "The method seems to me a closer approximation to the true one than has yet been reached. The book is a long step in advance. Give a boy a competent instructor and this text book, and if he does not get more than dry bones out of history, it will be because he it not fitted for such food."

We shall hope to hear that you find the book worth a place in your schools.

. . . . . .

Very truly yours,

D. C. HEATH & CO.

TORONTO, January 22nd, 1886.

SIRS,—Miss Sheldon's history, in some respects, is a very valuable book. It is not however, what we want for our Public Schools. Teachers could certainly use it with profit in both public and high schools, but our course does not embrace Ancient History. She has treated the subject in a very original manner. The adaptation of her method will certainly tend to a more intelligent study of the philosophy of history.

Yours truly,

G. W. ROSS.

D. C. HEATH & Co.,
Publishers, 3 Tremont Place, Boston.

ST. CATHARINES, January 9th, 1886.

Hon. G. W. Ross.

DEAR SIR,—Mr Seath informs me that you have decided to eliminate all questions from body of the book on history, and instead insert an introduction dealing with the proper method of teaching history. Mr. Adam does not seem to have fully comprehended the nature of the change proposed, as he wishes to have chapters made up for purposes of electrotyping. I do not see how it is possible to complete the book so far as written, as other changes may be deemed necessary. I am afraid it will be a difficult task to prepare an introduction such as is required—there are so many different ways of teaching history, and such differences of opinion on what is the best method. Nevertheless, I will try to satisfy all reasonable expectations.

Mr. Adam would show you the hints and questions attached to chapters you have not seen. I think the hints cover a good deal of the ground to be worked into the introduction. Mr. Adam sent me your corrections; many of which I retained. The questions you inserted are in some cases too difficult for young pupils, they require too great maturity of thought.

I am glad the algebra is satisfactory. We hope, by great care, to make it acceptable and useful to both teachers and pupils.

Yours truly,

W. J. ROBERTSON.

TORONTO, January 12th. 1886.

MY DEAR SIR,—I saw Mr. Adam to-day and am very much pleased with the suggestions which are prefixed to each chapter of the new history. I have not yet looked over the additional questions, but expect to do so in a day or two. In the meantime if you have hints to teachers prepared, address them to me, I shall have them set up in our own office for revision and consideration of Mr. Seath, and some others, before adopting them. I am strongly inclined to the view that the hints prefixed to the chapter are so full, or may be made so full, as to obviate a lengthy introduction on the line suggested by Mr. Seath. However, as the field is a new one, it might be wise for us to cultivate all its departments tentatively, and when matured ideas are in type, then to decide which course is the preferable one. I hope you do not feel that labour expended in this way is waste power, because the book will likely remain on our course for many years to come ; and as it is a new venture and no doubt will be criticized by rival publishers, I would like every new idea it contains to be thoroughly considered before I commit myself publicly to any line of policy.

Yours truly,

G. W. ROSS,

W. J. ROBERTSON, Esq., M.A.
Collegiate Institute, St. Catharines.

St. Catharines, January 12th, 1886.

Hon. G. W. Ross.

Dear Sir,—I have sent for your opinion a rough draft of a preface, dealing with the importance of history as a study, the best method of teaching it, and samples of examination questions. They are submitted in the hope of being able to gain some light on what is required in this respect. Consequently the draft is not in a good condition for publication, and is not intended for that purpose. Another plan I thought of pursuing—that is of putting headings to paragraphs and numbering the different points taken up. Kindly return unless you think it satisfactory, with a statement of what is deemed desirable.

Yours truly,

W. J. ROBERTSON.

St. Catharines, February 17th, 1886.

Dear Sir,—For the last four or five days I have been at work on the History Primer. So far as my judgment goes, the English part will do. It is far better than I expected it to be—especially the latter half. As a whole it will now suit admirably your purpose.

But it is going to be 200 pages long, and it will cost 50c. at least. This is a serious matter. Its size and contents, especially the works of reference, will appal the pupil and the casual reader, and its price will be a handle for attack. One-third of the book, at least, is for the teacher only. Allow me, therefore, to suggest that there be two editions of the book, one for the teacher, containing what is now in it—introduction, hints, questions, etc., and one for the pupil, containing merely the text. This latter can be sold for 30 or 35 cents, and the teacher can afford to pay 50c. or 60c. for his. There is nothing in the present book that will be useful to the pupil except the text. Even the questions are of no use to him unless he be of precocious intelligence. This arrangement will meet the objections I have urged—the size and the formidable appearance of some of the contents. But I feel confident this view will strike you favourably. Why should the pupil be mulcted for the teacher's benefit?

. . . . . .

Yours respectfully,

J. SEATH.

Hon. G. W. Ross.

Education Department,
Toronto, 19th February, 1886.

My Dear Mr. Seath,—I saw Mr. Adam and Mr. Clark this morning in respect to the new primer. I insisted that the book should be kept within a reasonable size, and that the price should not exceed 30 cents. A teacher's edition would, I fear, complicate matters. The enemy would say it was another device to aid the publishers; and some confusion might arise in the public mind as to which was the teachers' and which was the pupils' edition. Mr. Adam might very well compress the Canadian history into thirty or forty pages at the outside. I think he can also reduce a certain portion of the English history. Whatever you do in the way of revision hereafter, please do not forget that it is most important to condense. Do it heroically. The jottings referred to were sent to Mr. Hodgson some time ago with instructions to make such additions as he thought wise, and then forward to you.

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Yours truly,

G. W. ROSS.

Jno. Seath, Esq., B.A.,
Inspector High Schools, St. Catharines.

EDUCATION DEPARTMENT,
TORONTO, 17th March, 1886.

MY DEAR SIR,—I have decided to retain both "hints" and "questions" in the new Primer of English and Canadian History, and to publish but one edition, namely, that required by pupils. I believe the hints will add considerably to the value of the book. They are a new feature, and will direct the teacher both as to his reading and his mode of teaching. I am very much disappointed that Mr. Clark does not see his way clear to sell the book for 30 cents. The second reader, containing the same number of pages, sells for 25 cents. The third reader, containing no more pages than the proposed book, sells for 35 cents. I know if this book is put upon the market at 40 cents, it will provoke a great deal of criticism. Had I to deal only with those who are fair and reasonable, my position would be somewhat easier. But in the face of criticism of a very hostile character, and with the precedent in the matter of price above quoted, I must insist upon either a reduction in the quantity of matter, or some reduction in the price. I hope still that the outside figure will be 35 cents for 192 pages.

Yours truly,

G. W. ROSS.

W. J. ROBERTSON, Esq., M.A.,
Collegiate Institute, St. Catharines.

EDUCATION DEPARTMENT,
TORONTO, 1st April, 1886.

MY DEAR SIR,—

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I would like very much to see proofs of the Canadian portion of the new history as soon as possible. Under no circumstances can the book be allowed to exceed 192 pages, your introduction included. I would like to preserve your introduction, as it contains very many valuable ideas. Mr. Adam told me that the hints and questions would not take up more than fifteen or sixteen pages at the very outside. Am surprised you say they will occupy nearly forty pages.

Yours truly,

G. W. ROSS.

W. J. ROBERTSON, Esq., M.A.,
Collegiate Institute, St. Catharines.

ST. CATHARINES, April 3rd, 1886.

Hon. G. W. Ross.

DEAR SIR,—I am afraid you misunderstood my statement about quantity of hints and questions in primer. Allow me to give an approximate estimate of the contents:—

(1) English portion contains 137 pages, of which about 2 pages are portraits, 6 or 7 pages, maps, and 15 to 20 pages, hints and questions. Text proper will be about 110 or 112 pages.

(2) Canadian portion, as it now stands, contains—portraits, 1 page; maps, 3 pages; hints and questions, 4 pages; history proper, 48 pages, and chapter on "How we are governed," 5 pages. Total, 61 pages.

The whole contents of book will be thus about 198 pages, without introduction, which contains 4 pages. You will thus see that the text to be mastered by the pupils will contain some 163 pages or 160 pages, hints and questions take about 20 or 25 pages, and maps, cuts, portraits, some 14 or 15 pages. I do not see any necessity for numbering full-page maps; it is not reading-matter, and does not add to quantity of work to be

prepared. If these maps are left without numbers, it is possible to keep the book within the limit of 192 pages. I wished Mr. Clark to leave out some of the Canadian maps, but he seemed unwilling, and stated that he would put in an extra half-sheet without charge. The maps are all of an interesting character, dealing with historic incidents, and, for my part, I would like to see them retained, if possible. I send by this mail the last chapter of primer to publisher. Next week I hope you will be able to see Canadian portion in page form.

. . . . . .

Yours truly,

W. J. ROBERTSON.

TORONTO, 7th May, 1886.

MY DEAR SIR,—I fear that I cannot give any advice in regard to the price at which your new algebra shall be put upon the market. A work of such a comprehensive character, designed to compete with others already authorized, would require to be examined very carefully before any Departmental decision is given as to its merits. The question of authorization, therefore, will need to stand in abeyance for some time. I might say, however, that if you could afford to sell the book at 75 cents, it would, no doubt, facilitate its sale. I have noted your suggestion *re* magistrates in the new work on Canadian history; as changed by me it is correct. I expect to settle the price of the new history with Mr. Clark to-morrow.

. . . . . .

Yours truly,

GEO. W. ROSS.

W. J. ROBERTSON, Esq., M.A.,
St. Catharines.

TORONTO, 17th May, 1886.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—We have now the honour of laying before you completed copies of the History Primer, which will, we trust, meet your approval, and secure authorization for the schools of Ontario. You will observe that there are in all 208 pages—equal in weight of paper to the Third Book of Readers. The cover is not the permanent design. The engraver is at work upon that as submitted to you, but we could not get it in time for these copies—but none will be issued for sale in this cover—the approved one will be ready in a few days; the authors' names will not appear on the cover. The publisher's name, with some device, will be on the back—the price at the bottom of the front cover as with the readers.

Respectfully submitting these books, we have the honour to remain,

Your obedient servants,

THE COPP CLARK COMPANY (LIMITED).
H. J. CLARK.

TORONTO, 20th May, 1886.

Hon. G. W. Ross,
Strathroy.

DEAR SIR,—We send you by same mail a copy of History. We are sorry that we have not a fresher copy. This has been used for a critical examination for any typo-

graphical defects and may look a little used. We only did up four copies and Mr. Wilkinson took away yesterday the third, and this is the fourth. We will send half a dozen copies to our agent in London. Address enclosed. And if you will drop a line to him where to send them he will do so. We do this, as you may not be sure where you will stay in London.

We may say that if our agent—who is well known in the City of London—a member of the Common Council and highly respected, can serve you in any way, he will be pleased to do so. Upon Mr. Crooks' last visit, he used him very largely, and intimated that he would constitute him London Agent of the Education Department, and in fact wrote letters to that effect, but his unfortunate sickness terminated it all.

Respecting the Copy Books of Business Forms, etc., the changes you suggested to Mr. McAllister have all been made, and a few others to improve the general appearance and character of the book.

Are we at liberty to advertise it as authorized? We know, of course, that no agreement has been made, there was not time before you went away. We should, of course, like to do so, the copyright we will put in your name—a line from you on this point will oblige. The History, we consider, authorized of course. One of our sureties is out of town this afternoon, but the bond will be fully executed and sent up to-morrow.

Wishing you a safe and pleasant trip, and hoping to wait upon you on your return,

We remain,
Your obedient servants,

THE COPP, CLARK COMPANY (LIMITED).
H. J. Clark.

Education Department,
Toronto, May 25th, 1886.

Gentlemen,—I am directed by the Minister to state:

1. That the recommendation for authorizing "Public School History of England and Canada" and for ratifying agreement made respecting its publication was sent to the Council on the 20th.

2. That the Copy Book of Business Forms for Fourth Class may be issued at once, on the conditions named in letter of the 20th.

Your obedient servant,

ALEX. MARLING,
Secretary.

The Copp, Clark Co.,
Publishers,
Toronto.

Education Department,
Toronto, May 27th, 1886.

Gentlemen,—In reference to my letter of 25th instant, I have the honour to inform you that the "Public School History of England and Canada," published by you at 35 cents per copy, has been authorized for use in the Public and High Schools of Ontario, subject to the regulations of the Department.

A circular will be sent to the Public School Inspectors to announce this, and you will be furnished with a copy as soon as it is printed.

Your copy of the agreement is sent herewith.

Your obedient servant,

ALEX. MARLING,
Secretary.

THE COPP, CLARK CO.,
Publishers,
Toronto.

TORONTO, 19th May, 1886.

Hon. G. W. ROSS,
Minister of Education.

DEAR SIR,—We have the honour to return the blank form of agreement with a few suggestions for alteration which will, we trust, meet your approval.

In clause 3 we have filled in with pencil the details as to size of paper, character of binding, etc.

In clause 6 we have inserted the size of book and price.

In clause 9 we have stated the discounts for various lots.

In clause 11 we would suggest the introduction of the sentenced as in clause 15 at No. 1, "Upon giving to the said parties six months notice," and at the close of said paragraph (No. 2) the words "The expenses of such arbitration to be borne by the Department of Education."

Clause 16 we do not altogether like, either in the blank form or in the copy signed by the Canada Publishing Co'y, which reads a little vague and even contradictory, but to save time we are willing to accept the clause as in that copy with the restoration of the first part of the clause there struck out, viz.: "And that the said publishers shall have for two years, from the first day of September next, the sole right to publish within the said Province of Ontario and Dominion of Canada the said authorized book," and instead of the sentence "At any time or after it" after the aforesaid two years.

We trust that these points, which do not interfere with any vital part of the agreement, will meet with your approval, and if so, we are prepared to complete the document at once.

We may say that after the return of the writer from the interview with you yesterday three of us have gone carefully into the matter of cost, it will be higher than Mr. Thomas told you. Some points he did not, we expect, know as to cost. Thirty-five cents will not pay, we could not hope to recoup our outlay and pay current expenses on the book within anything like a reasonable time.

We leave the matter in your hands, and have the honour to be,

Your obedient servants,

THE COPP, CLARK COMPANY (LIMITED.)
H. J. CLARK.

COPY of a Minute of the Department of Education, dated the 21st day of May, A.D. 1886.

Upon the consideration of a report of the Honourable the Minister of Education, dated the 20th day of May, A.D. 1886, the Department of Education do hereby order:

That the "Public School History of England and Canada," published by the Copp, Clark Company (Limited), at thirty-five cents per copy, be authorized for use in the Public and High Schools of Ontario, subject to the regulations of the said Department.

The Department further orders that "Creighton's Epoch Primer of English History," authorized in 1879, "Edith Thompson's History of England," authorized in 1877, and "Collins' History of the British Empire," authorized in 1867, be removed from the list of authorized books on and after the first day of July, 1887.

Certified.

J. LONSDALE CAPRÉOL,
Asst. Clerk Executive Council,
Ontario.

The Honourable
The Minister of Education.

Copy of an Order in Council, approved by His Honour the Lieutenant-Governor, the 22nd day of May, A.D. 1886.

Upon the recommendation of the Honourable the Minister of Education, the Committee of Council advise that copies of agreement, submitted herewith, made the 19th day of May, 1886, between the Canada Publishing Co. (Limited), The Copp, Clark Co. (Limited), and Her Majesty the Queen, represented by the Honourable the Minister of Education for the Province of Ontario, respecting the publication of the Canadian Drawing Course, and the Public School History of England and Canada be approved of by your Honour.

Certified.

J. LONSDALE CAPRÉOL,
Asst. Clerk Executive Council,
Ontario.

The Honourable
The Minister of Education.

Toronto, 3rd September, 1886.

Hon. G. W. Ross,
Minister of Education.

Dear Sir,—Enclosed we beg to send some personal notices of the History and of the Copybook. Of the former we have a few more, but they have been mislaid; of the latter we send all that we have received.

We shall be glad if you will kindly lay them aside when you have made what use you wish of them, as we shall likely make extracts of them from time to time.

Press notices of the History are pasted into a book, the writer will bring it up personally to the office.

Your obedient servants,

THE COPP, CLARK COMPANY (Limited).
H. J. Clark.

Toronto, Ont., September 6th, 1886.

The Hon. The Minister of Education,
Education Department, Toronto.

Sir,—We hereby respectfully beg to make application for permission to print and publish the book entitled, "Public School History of England and Canada," now

authorized as a text-book for Ontario schools, as soon as possible after the expiration of the contract with Messrs. "The Copp, Clark Co.," the present publishers.

We are prepared to fulfil the conditions required by the Department in the matter.

We have the honour to be, Sir,
Your obedient servants,

WARWICK & SONS.

TORONTO, 18th September, 1886.

DEAR SIRS,—I beg to acknowledge the receipt of your two favours of the 6th instant, respecting the publication of the High School Reader and the Public School History of England and Canada, and to state that as soon as the right of publication held by the present publishers expires, the Department will consent to the appointment of the arbitration under the agreement, in order that the privilege of publication might be extended to you or any other publishers that might apply.

Yours truly,

GEO. W. ROSS.

Messrs. WARWICK & SONS,
Toronto.

TORONTO, May 9th, 1886.

Hon. G. W. ROSS.

DEAR SIR,—I transmit to you along with this note the preface and page of contents of the history, being prepared and under publication by Prof. Bryce. He states in the accompanying letter what he wishes, and which, from what I know of the large amount of work and exhaustive research applied to the preparation of the work, you will have no difficulty in granting.

With so much persistent critical attention, as is at present being paid to the publications issued or authorized by your Department, I imagine that apart from the question of its merits, you will be glad to add a book to your list of authorized works written by one who may fairly be said to be beyond the influence of Ontario politics. Prof. Bryce will be in Ottawa at the end of May at the session of the Royal Society, and will be in Toronto both before and after the meeting. If agreeable to you, you will kindly fix a date before your departure for England, when he can have an interview with you on the subject, and I shall endeavour to arrange it for him.

Yours faithfully,

PETER H. BRYCE.

TORONTO, May 20th, 1886.

MY DEAR DR. BRYCE,—I have looked over the outline of the work on "Canadian History," now in course of preparation by your brother, Prof. Bryce. The plan is, certainly, an admirable one, and the work will, no doubt, be a valuable contribution to the history of Canada. I fear, however, it will be too large and expensive to place upon the list of authorized books. No doubt, to the teacher as a work of reference it will be of great service, and I shall in any way that lies in my power encourage its sale among teachers and mechanics' institutes.

Yours truly,

G. W. ROSS.

P. H. BRYCE, Esq., M.D.,
Toronto.

TORONTO, May 21st, 1886.

MY DEAR MR. ROSS,—I thank you very much for your kind letter in reference to my brother's book. I shall send it to him at Royal Society, Ottawa, and should he be able to supply you with information regarding its probable cost, it may be that you will find it possible even to go farther than what you have already been good enough to promise in regard to the work.

Thanking you again for your kindness in the matter.

I remain yours very truly,

PETER H. BRYCE.

Hon. G. W. Ross.

MANITOBA COLLEGE, WINNIPEG, August 27th, 1886.

MY DEAR SIR,—I enclose a prospectus of my forthcoming work. I have to thank you for the favourable letter written before your departure to England. I insisted on my publishers keeping down the price. I hope the book may sell in Canada for $2. A second edition, if the work takes, could be got out for about $1.50 I believe.

I hope the work may be out by November. Hoping I may have your countenance,

I am yours truly,

GEORGE BRYCE.

Hon. G. W. Ross.

TORONTO, 2nd September, 1886.

MY DEAR PROF. BRYCE,—I have read with pleasure the prospectus of your proposed history. I shall await its publication with interest, and hope whether capable for authorization or not in our Public Schools, it will be found useful in enabling the people of Canada better to understand the development of our Constitution and the progress we have made towards a higher national life.

Yours truly,

GEO. W. ROSS.

Professor GEO. BRYCE, M.A.,
Winnipeg.

MANITOBA COLLEGE, WINNIPEG, May 16th, 1887.

MY DEAR SIR,—Last year on the issue of my announcement by Sampson, Low & Co., of London, you were good enough to express an interest in my forthcoming work on Canadian History. That book has now been out for two months, and I trust has come under your notice. If not, I shall be happy to tell the Toronto agents to forward you a copy with my compliments.

To my mind Canadian history has been so poorly treated hitherto, that I found it necessary to give much attention to the source of our history. For example, as to the Norsemen visiting our shores, not five teachers in five hundred in Ontario have any idea what the sources of information on that subject are. I have made that plain, but in doing so have had to devote more space to the subject than if there had been any Canadian history which had already done so. So as to name of Canada; the voyages of Cartier; the boundaries of Canada and the like. The authors whence the materials on these and many other subjects are drawn are practically unknown to Canadians. I have given numerous references, have given, in short, the most important controversies, such as on Verrazano, the Cabots, Vespucci, etc., and enabled students of history to know where to find the lines of study and the materials for research. In doing so I have been compelled to lengthen the former part of my work. But this part of my work has been universally recognized as important even in Adam's ill-natured criticism in the *Week*. One of the heartiest and most favourable critiques of the book as a whole, is from that

usually severe critic, the *Edinburgh Scotsman* of April 4th. Almost all the unfavourable criticism arises from those who think I have condensed too much. I am sorry for Adam who writes so bitterly in the *Week*. I did not, in writing on literature, have him specially in my eye, though I have known him for years; but I find on reading the passage over, as to "School Manuals," and especially in the editorship of the *Canadian Monthly*, I have hit him pretty hard. It certainly was not intentionally personal, on my part. He should not have noticed it, for, as "Arcturus" has well pointed out, it is the "galled jade wincing."

The plan of my book has been universally recognized as good and as new in Canadian history; the development of different parts being regarded as satisfactory or not, very much according to the special tastes of the reader.

Now, as you are aware, my plan was not to make this book a book for schools. The scholar needs to know the results not the sources from which these are obtained, though every teacher should know the sources. I am now making arrangements for the issue in Toronto, of "a smaller history of Canada," which will be about the size of Adam and Robertson's "School History of England and Canada," authorized by your Department. I should propose to sell it at about 35c. or 40c. I expect it out about the middle or end of July.

There is, certainly, a wide field in Canada for such a book, not only in Ontario, but in the other Provinces. I know there is a generally felt want for such a book. Adam and Robertson's book in this Province but aggravates this want.

As to my forthcoming "smaller history," I am not sure that I quite coincide in my view of "school history" with what seems to govern the Education Department in Toronto. Probably this is not the fault of the Department. It may be the Department has but to utilize the material it can obtain. To my mind the love of history is gained in childhood, if gained at all. It is the love to enter into the experience of our fellow human beings. Now, to do this, mere skeletons must not be placed before the young. It must be living men and women, dressed up in the garb of their time, surrounded by the features of dwelling, clothing, scenery and circumstances amidst which they moved. If I can make the Loyalists, or Scottish immigrants, or fur traders, or French Canadians stand out before the imagination of a scholar, I do ten times as much for the mental development of such a one, as if I filled the child's mind with dates and dry facts and the like. In the one case I have cultivated the imagination, affections and moral sense while strengthening the memory, in the other I have but created a *memoria technica* and a narrow mental vision. From several considerations I am led to believe I have some faculty for this kind of work. I object, as much as any one can, to descriptions of men or their times with the wealth of "oriental imagination." I have a thorough contempt for what is called "fine writing," but I recognize that in any effective style, there must be a sufficient poise or rest, in order to make the picture real. The criticism of the *Scotsman* was by one quite unknown to me, but he described my style exactly as according to my ideal a style should be—(excuse the personal reference) as a "clear, terse and lively style."

Now as to my forthcoming "opusculum." I should like to have the privilege of sending to you personally the proof, as it comes from the printer, and to have, if you see fit to make any criticisms, these sent to me. Of course you understand, if the book is not a good one for schools, I do not wish to see it adopted. You are aware that my literary position and intellectual standing are with me the chief thing, as well as a desire to benefit the youth of my native country. The matter of emolument is, as you know, quite a secondary one to me.

Please excuse this long disquisition. I shall be glad to hear your views on the matter, if your heavy duties allow you time to give them.

I am yours truly,

GEORGE BRYCE.

Hon. G. W. Ross,
Toronto.

P.S.—Allow me to congratulate your Government on what seems a great advance in my *alma mater*, Toronto University. G. B.

TORONTO, 21st May, 1887.

MY DEAR DR. BRYCE,—I am reading with considerable interest your new History of the Canadian people. From its minuteness of detail, the work is evidently more extensive than our present High School curriculum, with its many subjects of study, would demand, and the price at which it is sold would also be an obstacle, so that the most that could be done is to recommend it as a work of reference for teachers.

Messrs. Adam and Robertson's History of England and Canada has been very well received, and has driven from the field all other competitors. Under these circumstances, and at so early a date, to authorize another History of Canada would appear like discounting our own success. I cannot, therefore, undertake at present, the proposition you make of adapting your large history to the more limited curriculum of our Public and High Schools.

I might add that the list of text books for the Public and High Schools has been recently revised, and assurance given that there will be no addition or alteration made for some time, and it is desirable that these promises should be carried out.

Yours truly,

GEO. W. ROSS.

The Rev. Dr. GEO. BRYCE,
Winnipeg.

MANITOBA COLLEGE,
WINNIPEG, August 18th, 1887.

Hon. G. W. Ross.

DEAR SIR,—Some months ago you were good enough to write to me in connection with a proposed school history of which I spoke. I have since been so busy with the General Assembly and University Examinations, along with some necessary visits paid to the Indian Reserves, that I have not had time to consider your statement that Adam's History of Canada had been received with favour in Ontario. This surprises me very much, because I know that many of the best critics cannot speak of it with patience. I have reason to believe that, in connection with the school system, there is a good deal of criticism that is not disinterested. Nor, since my attention has been called to the matter, and since I have received the urgent offer of a Canadian publisher to publish a school history, do I say that I, on the other hand, am entirely disinterested. Though I have not read the English part of the work, perhaps you will bear with me while I point out some of the glaring defects of that on Canada. There are reasons of a social and public kind why I do not make these in any of the newspapers, which would be glad to get hold of them, but rather why I should send them to you. I apologize for the length of the accompanying criticisms.

GENERAL CRITICISMS.

1. Keeping in view the concise character a school history should bear, yet there cannot be a suitable history of Canada for Schools (Public School History of England and Canada) for any single province of the Dominion. Any Canadian in any province should be acquainted with the outline-history of every province of the Dominion.

2. While, as stated by the author, the scope of this history is for Ontario, yet every here and there bits of Dominion history, such as admission of Provinces, and acquisition of the North-west, are wedged in, in the most illogical manner.

3. See the grave omissions: No reference to Veran, the discoverer of the North-west, though La Salle and Joliet are treated; Hudson's Bay Company not alluded to; Burgoyne's expedition, fitted out in Canada, is ignored; the North-west Company, a great Canadian agency, is not mentioned; there is little more than an allusion to the great work of building canals, for which Canada is famous; the Allan Line, a great Canadian

triumph, is unnoticed; and the Canada Company, Talbot, Selkirk, and the like, are names unknown in this compendium. The work has no index, explanatory tables, chronology, or the like.

4. See other grave defects. How can a work satisfy the rising generation which omits or barely mentions such names in our history as Laval, Colbert, Bishop Strachan, Chief Justice Robinson, Bidwell, McDougall, Cartier, Blake, and Mowat?

5. While there are such defects, which some may attempt to explain by the conciseness necessary, yet there is a good deal of "padding" in the book.

Examples: 1. First 13 lines on page 147.
" 2. Last 15 lines on page 158.
" 3. Twenty lines of the U. E. Loyalists on page 161.
" 4. Last 14 lines on page 126.

6. The conviction is forced on the reader, that this book is chiefly a compilation of the common school histories, for it has all their errors; that the author has little power to enter into the feelings and motives of the people at their different stages; that he has no deep acquaintance with the social condition—past or present—of Canadians; and that he is not a teacher. Now these might seem sufficient, but I have taken the trouble to go through the pages and note palpable and in many cases needless errors.

1. Page 142, line 5—"Vespucie . . . . *rather unfairly succeeded.*"—It has been shown that it was by no selfishness of Vespucie, but by the neglect of Spain that the continent was not named from Columbus.

2. Page 142, line 15—"New France."—The name "New France" was not given to Canada until 1609, and then as a special mark of his favour to Champlain by Henry IV.

3. Page 142, last line of note—"Algonquin."—This is a frightful mistake, "Kanata" is Iroquois.

4. Page 143, line 10—"Arctic."—This was the Canadian winter. Certainly it is not "Arctic."

5. Page 143, line 25—"Western."—Eastern more than Western. The Mohawks lived near the Hudson.

6. Page 144, line 13—"Champlain named Lachine."—It was La Salle who gave the name Lachine to his Seigniory here.

7. Page 144, last line—"On the Georgian Bay."—Having visited Georgian Bay, Champlain came through to Lake Ontario. With the Indians on the north shore, he moved to New York state region and fought the Iroquois. Georgian Bay does not describe the Huron country.

8. Page 145, line 17—"Sole right to engage in the fur trade."—Inaccurate; it was the right to purchase at a certain rate all furs taken by the trappers of the country.

9. Page 147, line 36—"Sovereign authority."—Inaccurate. The Council was the "Sovereign Council of Quebec," but the Governor was Viceroy; all others were his subordinates.

10. Page 148, line 7—"'Custom of Paris,' administered by Council."—This was administered by judges in different parts of the country.

11. Page 148, line 25—"infinite toil."—Not the case. It was an easy voyage, even the portaging at the height of land was done by the Five Nation Indians.

12. Page 148, line 29—"daring young Frenchman."—La Salle was in his 40th year.

13. Page 148, line 32—"To undertake the enterprise La Salle had been given, etc."—Inaccurate. In 1674 La Salle went to France and obtained a grant of the Seigniory of Frontenac. It was he who built the Fort of Stone, not Frontenac. It was in 1677 that, on a visit to France, La Salle got permission to go west.

14. Page 148, line 36—"1697."—Probably a misprint for 1678.

15. Page 149, line 1—"to explore Lake Erie."—Joliet and others had explored Lake Erie; the object was to build a vessel to send furs from Michilimackinac.

Note.—The whole paragraph on La Salle is very defective—in fact hopeless.

16. Page 149, line 18—"Question of the liquor-traffic."—This was but a small part of the cause of the quarrel.

17. Page 150, line 8—"more than a thousand."—The number usually given is two hundred. Lachine had not a thousand inhabitants.

18. Page 151, paragraph 7.—The whole section of disputed boundary is very imperfect.

19. Page 156, lines 1 and 2—"To scale, etc."—Surely the author was never in Quebec. It was not to scale the inaccessible cliffs of the citadel, but the bank several miles up the river from the citadel—to climb up the banks to the plains of Abraham. They are to the west of the citadel, not in rear of it.

20. Page 156, line 5—"The bulk of the army was to move up the river."—This had been accomplished days before. Nearly two months before this the first ship had passed the batteries of the citadel, and twenty-one sail had been gathered above Quebec. The description gives no correct idea whatever of the plan of attack.

21. Page 158, line 10—"Military rule from 1760–1774."—This is a mistake. The "regime militaire," or "rule of the soldiery," of which the French so complained, was only from 1760–1764, four years.

22. Page 159, lines 18-21—"The intrusion, etc."—This is inaccurate. It was the use of English law almost entirely to which the French objected. There were few English before 1774.

23. Page 159, line 34—"The position was critical."—This cannot be a true explanation. In 1774 British feeling was in favour of crushing the Americans. Rather than to conciliate the Canadians, the British parliament refused to grant, in face of Chatham, Burke and Townsend's remonstrances, an assembly to Canada.

24. Page 160, line 10.—"Legislative Council" should be "Executive Council." The legislative element was expressly excluded.

25. Page 160, line 25—"Solely for the financial benefit of England."—Not fair; the claim was that taxes should be imposed to pay the share of the colonies for protection of their own country during the seven years' war.

26. Page 160, line 32—"passive attitude angered."—Not the cause. There had not been time to see what Canada would do. The invasion of Canada took place twenty days after the collision at Concord. The object was to prevent Canada being a base for Britain's operations, by bringing troops up the St. Lawrence.

27. Page 162, line 2—"ten thousand in the maritime provinces, and nearly twenty thousand, etc."—It was exactly the reverse, twenty thousand in maritime provinces, and ten thousand in Upper Canada.

28. Page 162, line 15—"General Haldimand, etc."—This follows out the usual line taken by Canadian school histories of blackening Haldimand. A troublesome man, Du Calvet, brought charges against Haldimand. Haldimand will yet be vindicated.

29. Page 162, line 36—"Representative government already enjoyed by the people of the maritime provinces."—A gross blunder. It was not till after Lord Durham's time that this came in the lower provinces.

30. Page 163, line 9—"The Ottawa river became the boundary line."—Inaccurate. Two French counties of Lower Canada are on the west side of the Ottawa.

31. Page 163 and 164.—There is through these pages a failure to comprehend the real state of affairs. The Coast Act of 1791 was a great boon. It was as far in advance as it should have been, considering the state of the country. Political development

made changes necessary, but all through these pages there is a reading into the times the circumstances of later political history.

32. Page 166, line 26—"bluff old soldier."—Simcoe was, at this time, only 44.

33. Page 167, line 5—"Laudable provision was also made for education."—Schools to receive £100 each, was all for 77,000 people.

34. Page 172, line 19—"There is little to record, etc."—Another writer says, "The campaign (1814) opened briskly in Upper Canada."

35. Page 174, line 24—"Alien Act was vigorously enforced."—As a law it was almost disused, but was revived to persecute Gourlay.

36. Page 175.—The treatment of Clergy Reserve struggle here simply outherods Herod. It really gives no account of what was the greatest struggle Canada ever saw. Surely it deserves better consideration than this, and that in the short closing notice at page 186.

37. Pages 179, 180.—*McNab* and *Thompson* both spelt wrong. (I made the same mistakes in my short history.)

38. Page 181, line 13—"A provision which practically secured . . . . responsible government."—The Act contained no such provision. Instructions were given to the Governor that he must not oppose the assembly, except in extreme cases. Lord Metcalfe after this defeated the people's will.

39. Page 181, line 14—"The whole revenue was placed under the control of the Legislative Assembly."—Wrong; over the £75,000 of Civil List the Assembly had no control.

40. Page 181, line 16—"The proceedings of parliament . . . . in both languages."—Wrong. The English language alone was permitted in the Legislative records, but this was changed in after years.

41. Page 183, line 9—"Lord Ashburton."—Was not Lord Ashburton at this time. Was Hon. Alex. Baring.

42. Page 183, line 15—"Northward."—Westward it should be nearly along 45° N.

43. Page 188.—Origin of Confederation improperly described. Began with lower provinces. Canadians attended at Charlottetown, by sufferance.

44. Page 189, line 7—"Federal parliament."—No such thing in our Constitution. Federal thus applied is inaccurate. There is one parliament for Canada, consisting of the Queen, Upper House or Senate, and the House of Commons.

45. Page 190, last line—"The French and half-breed population."—The half-breed population is divided into two parts, *French* and *English*. There were few French in Red River Settlement.

46. Page 191, line 9—"Louis Riel, a French Canadian."—Was a French half-breed, a native of Red River.

I trust I have not wearied you, but surely I have made out my case.

I have the honour to be,
Yours truly,

GEORGE BRYCE.

Hon. G. W. Ross,
Etc., etc.

TORONTO, August 27th, 1887.

MY DEAR SIR,—I send you a letter just received from Mr. Geo. Bryce, in which he makes a slashing attack upon the Canadian part of the Public School History. I am quite willing that the letter should be answered, for I believe some of the criticisms are exceedingly fine and unworthy a man pretending to be a liberal-minded author himself.

If you will undertake to reply, I shall have your letter copied and sent as my answer to Mr. Bryce's criticisms.

Yours truly,

GEO. W. ROSS.

G. MERCER ADAM, Esq.,
Toronto.

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184 SPADINA AVENUE, Tuesday, September 6th, 1887.

MY DEAR SIR,—I have been prevented at an earlier day from giving attention to the Bryce criticisms on the History.

I have now, however, gone over them carefully, and have had the benefit of an examination and report on them by Mr. Robertson. The sum of the whole matter is this, that out of 46 separate indictments, less than six are worthy of a moment's consideration; If this is all that a professed intimate knowledge of Canadian History *plus* undoubted personal malice towards myself, and jealousy that his own design of preparing a school history has been forestalled, has to say against the authorized primer, then it may truly be said that it is a better book than even its authors had supposed. Mr. Bryce's main criticisms are founded on the mistaken notion, that he expects the authors to deal within the compass of 50 pages with matters which would require at least four times the space to discuss. For the rest, he is either hypercritical and extremely finical, or he is himself wholly wrong.

His whole communication shows him to be a narrow-minded, pitiful pedant and a spiteful, wrong-headed, and malignant critic. He should be told now to break his teeth on the English History. Head of a College and religious seminary, forsooth !

With much respect,
Yours very faithfully,

G. MERCER ADAM.

The Hon. GEO. W. ROSS, M.P.P.
Minister of Education.

NOTES ON BRYCE'S CRITICISMS.

1. Too long and obscure a story to go into ; authorities differ, but the fact remains, as the text-book states, that Columbus was *unfairly* robbed of his honors.

2. This criticism, to be valid, should challenge the truth of Verrazzano's voyage, which some authorities hold never took place. *The Encyclopædia Britannica sustains the History.*

3. This is of little importance and authorities here again differ. In any case, the History statement is not far astray, if at all, as the Algonquins and Iroquois are derived from the same parent stock.

4. 50° below zero is surely Arctic enough ! See Principal Grant in "Picturesque Canada" opening part, on Jacques Cartier's winter in Canada, where he repeatedly uses the word "Arctic."

5. The Iroquois extended considerably westward of the Hudson.

6. The origin of the term "Lachine" is doubtful ; the authors give their statement here on good authority, and Bryce does not give Parkman's story correctly. There was a doubtful story that the returned voyageurs termed the port Lachine in sarcasm, but La Salle does not call it so.

7. Statement quite correct in the History. The homes of the Hurons bordered on the *Georgian Bay.* The previous page states specifically and correctly the location, viz.:

"Within historic times . . . . they (the Hurons) formed settlements in the Matchedash Peninsula, between Lake Simcoe and the Georgian Bay." The writer cannot be accused of ignorance of the location, if Mr. Bryce will read Mr. Adam's article on the Georgian Bay and the Muskoka Lakes, in "Picturesque Canada," and his novel "An Algonquin Maiden."

8. A distinction without a difference ! !

9. Correct. The Governor was not able to treat the intendant as a subordinate.

10. The History says that the Judges administered justice–not the Council. Mr. Bryce cannot comprehend clear English. It was "the five other members" the Judges who administered justice.

11. A mere matter of opinion. Had Mr. Bryce been at the discovery at that early day, with the whole land an unknown wilderness about him, he would have found the labour "infinite toil," I warrant him.

12. A man not 40 is not very old. LaSalle is properly described as "a daring young Frenchman."

13. Correct according to Parkman. *Frontenac built the first Fort.* The History is in no error here ; LaSalle's subsequent *stone* Fort. Mr. Bryce is reading into the History ; the authors refer to and speak of what is quite correct, that Frontenac erected Cataraqui "as a trading post at the foot of Lake Ontario."

14. Misprint 1677 for 1697.

15. Authors not quite sure on this point, matter will have to be looked into.

16. *One* important cause of quarrel (the liquor trade with Indians) the History is undoubtedly right in saying !

17. Criticism may here be right ; difficult precisely to ascertain. Bryce admits that Lachine had about 1,000 inhabitants. Some histories say that the whole were put to death in the massacre. Others, the authors are aware, limit the number killed to 200.

18. Impossible in the space to give even a "short history" of the boundary disputes.

19. Cliffs *of* Citadel should read "Cliffs *above* Citadel."

20. Quite right ; Mr. Bryce here again can't understand plain English.

21. Correct. Usually termed "Military Rule."

22. This criticism of no value.

23. "Critical" regarding the attitude of the bulk of the population of the new colony. The French were appeased, not the few British.

24. "Legislative" is right. This council passed ordinances. See Watson's "Constitutional History of Canada."

25. Statement correct. Mr. Bryce does not seem to understand the colonial policy of England at that time.

26. Criticism partly to be admitted, but Americans tried to seduce the Canadians before this and failed.

27. There is no authentic account of settlement of U. E. Loyalists in different Provinces. Number given as settling in the Maritime Provinces varies from 10,000 to 13,000. Number settling in Upper Canada, etc., also varies. History says "it is calculated that about, etc."

28. No value in this objection.

29. Mr. Bryce does not understand the difference between "Representative Government" and "Responsible Government." The Maritime Provinces had Representative Government long before 1791.

30. Ottawa River the boundary between Provinces ? Statement *too finical.* Every Canadian geography will tell Mr Bryce that the Ottawa river practically divides Upper and Lower Canada.

31. Mr. Bryce had better read Watson on the Constitution of Canada. This author's opinion and that of C. J. Fox are surely worth something.

32. A man could be an "old soldier" and yet not an "old man."

33-34. Neither criticism of any value.

35. Mr. Bryce should have been a Methodist preacher in the days of the "Alien Act." He would have learned whether it was or was was not put in force and that vigorously too.

36. Clergy reserves question. Authors had not space to write a volume on this vexed subject.

37. Friends in misfortune, verily !

38. Criticism is here allowable for once !

39. Revenue was all under the control of the Assembly ; but as History states $300,000 was pledged to civil list. Collection of revenue and disbursements (expenditure) with the exceptions noted, were in hands of Canadian Assembly. The History makes no mistake here.

40. Statement here made by Bryce will have to be looked up at Ottawa.

41. Surely better known, and indeed only known as "the Ashburton Treaty" not the treaty made by *Hon. Alex. Baring.*

42. Quite correct.

43. Mr. Bryce had better read up. Lower Provinces simply wanted *confederation* of *maritime Provinces.*

44. "Federal Parliament" is correct as given in History !

45. Correct enough in History.

46. Riel, it is stated in History, had Indian blood in his veins. Mr. Bryce is here quite disingenuous.

Toronto, 13th September, 1887.

My Dear Sir,—I have read with great care your criticisms on the primer of English and Canadian history, and made enquiry as to their validity through such authorities as were within my reach, and am satisfied that in point of accuracy, having regard to the usual conflict of authorities in minor matters, nothing of importance has been discredited by any of your statements. The old saying "that doctors differ," I suppose holds good in this case. We have had a great many histories of Canada, each with merits peculiar to itself, but perhaps none faultless. What is claimed for our school history is that it is a fairly accurate epitome of the main facts of Canadian history, so logically presented as to make it easy for any intelligent teacher to convey the same to an ordinary class of school children. It was not intended to supply all the facts, but such authorities were cited as would enable the teacher to possess himself of fuller information. In teaching history to children the less textual and more conversational the better. As matters stand at present, this text-book must remain the only Public School text-book on that subject for some time to come.

Yours truly,

GEO. W. ROSS.

The Rev. Professor Bryce,
Manitoba College, Winnipeg.

11 Orchard Terrace, Peter Street.
Toronto. August 31st, 1886.

The Hon G. W. Ross,
Minister Education, Toronto.

Sir,—I beg to enclose herewith MSS of "An Outline of English History," and submit the same for your approval.

Should it be approved of by you, I beg that it may be placed on the list of books authorized for use in the Public Schools of Ontario.

In the event of your not approving of same, will you kindly return to me, for which purpose I enclose stamped envelope.

I am Sir,
Your obedient servant,

H. N. ROBERTS.

Toronto, 9th September, 1886.

My Dear Sir,—I return herewith MSS of "Outlines on English History" and beg to state that, as the Department has recently authorized a work on the subject, it would be undesirable to place another book upon the market.

Yours truly,

GEO. W. ROSS.

H. N. Roberts, Esq.,
11 Orchard Terrace, Peter Street, Toronto.

Hereward, October 18, 1886.

Hon. G. W, Ross,
Toronto.

Dear Sir,—Now I ask a favour and wish you would be so kind as to answer.

I should like much to obtain reliable information concerning the histories to be used in Public Schools, and consequently write to you.

Can any other histories besides "New History Primer" be lawfully used in the schools?

When shall it be the duty of teachers to introduce this book?

I heard many objections as to the suitableness of this new work and do not wish to introduce it till I hear from you.

Could I use James Hughes' Topical History of England and Canada? What is your opinion of it as a text-book to prepare candidates for entrance examinations? or Creighton's Epoch History Primer?

Enclosed please find stamp.

Yours truly,
A. H. ROSS.
Hereward, Dufferin Co.

P.S.—What is the price of a copy of School Law and Regulations.

Please send me a copy and I shall remit price as soon as I receive it, or please tell the price, and then I can send.

Toronto, 20th October, 1886.

Dear Sir,—You are at liberty to use, until midsummer, any of the authorized histories. After that date the only English history available will be the new "Public School History."

Hughes' "Topical History" is not authorized and cannot be used in any case.
I send herewith a copy of the School Law and Regulations.

Yours truly,
GEO. W. ROSS.

A. H. Ross, Esq.,
Hereward.

HEREWARD, October 27th, 1886.

Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—I received your kind letter, and also the Regulations for which I now express my sincere thanks.

You did not mention price of Regulations but I now enclose 30 cents in stamps, and if price be more I shall remit it upon your letting me know.

Yours respectfully,.

A. H. ROSS.

TORONTO, October 22nd, 1886.

Hon. GEO. W. Ross,
Minister of Education,
Toronto.

SIR,—I desire respectfully to submit for your consideration the enclosed packet of cards, in one hundred lines of rhyme, containing the dates in succession of each sovereign, and the leading event or prominent feature in each reign, and I venture to hope you will be able to authorize their use in public schools of Toronto.

They were written by me about fifteen years ago, when I was the master of a first-class school in the town of Bury St Edmunds, in England. My boys found much difficulty in remembering the orderly arrangement of English history, but the use of the cards at once removed the trouble.

I may mention that my success as a teacher enabled me to retire from active duty about ten years since, and that I am now in America on a prolonged visit to a brother.

I would have remained in Toronto to have a personal interview with you but it is imperative for me to leave early to-morrow.

Believe me,
Most faithfully yours,

ROBERT CRASKE.

Please address 536 Broadway, South Boston, Mass.

I must apologize for using a pencil, but my hand is so cramped that I cannot easily use a pen.

The price of the cards is to be fifteen cents each packet.

TORONTO, 27th October, 1886.

MY DEAR SIR,—We have just authorized a history of England for the use of the Public and High Schools of the Province and are satisfied that it will meet all the requirements of our pupils for some time to come.

Your scheme has something to commend it as it aids the memory very much, but I think it is not desirable to authorize such cards as you have prepared for use in the Public Schools. If placed in our book stores, those who thought them useful might purchase for themselves.

Yours truly,

GEO. W. ROSS.

ROBERT CRASKE, Esq.,
536 Broadway,
South Boston, Mass.

(Telegram)

To Hon. G. W. Ross,
Campbellford.

From Toronto.

NOVEMBER 24th, 1886.

Please contradict the newspaper statements that I received money for writing history of any sort for your Department. These statements are untrue and foundationless.

D. A. O'SULLIVAN.

TORONTO, 27th November, 1886.

MY DEAR O'SULLIVAN,—I got your telegram at Peterboro' regarding rumor in newspapers that you were a recipient of money for writing a history for my Department.

The statement made in the newspapers was two-fold; first, that you were engaged to write a History of England and Canada, and that you were paid for that service.

Would it not be well to contradict both branches of the charge, as there was no engagement to write a History of England and Canada, and there was no money paid?

Yours truly,

GEO. W. ROSS.

D. A. O'SULLIVAN, LL.B., Esq.,
Toronto.

TORONTO, November 30th, 1886.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—I see it stated in some of the newspapers that I was engaged by you to write a History of England and Canada, and that I was paid a handsome sum for so doing. I was never engaged to write any such history, and was never paid a dollar out of the Education Department.

I have the honour to remain,
Yours very truly,

D. A. O'SULLIVAN.

POST OFFICE,
TORONTO, 21st March, 1887.

HON. SIR,—During my leisure hours this winter I have prepared a little work embracing English, Canadian and French history. It is in an epitomized form and intended as a review for students. I have passed the examination for common school

teachers and also those for entrance into the Civil Service, and in preparing for the examinations I found it necessary to wade through much in our histories not required in any paper of questions. It struck me that, as in other branches, much might be done in condensing.

Will you kindly permit me an audience that I may receive your valuable advice. If you can grant me the favour, please appoint any time most suitable to yourself, and greatly oblige,

Your obedient servant,

J. K. JOHNSTONE,
Post Office Department.

EDUCATION DEPARTMENT,
TORONTO, 24th March, 1887.

DEAR SIR,—The Minister desires me to state in reply to your letter of the 21st instant, that there is no prospect at present of the addition of such a book as you describe to the authorized list of books.

Your obedient servant,

ALEXANDER MARLING,
Secretary.

Mr. J. K. JOHNSTONE,
P.O. Department, City.

TORONTO, May 5th, 1887.

GENTLEMEN,—I observe that the two vols. of Schmidt's History of Greece and Rome could more economically be bound in one, as they are both necessary for students for matriculation. At what figure could they be authorized if bound in one volume? Could they not be sold for sixty cents?

Yours truly,
GEO. W. ROSS.

The COPP, CLARK Co.,
Toronto.

Disposed of by interview and price reduced from 90 cents to 75 cents.

BOSTON, September 28th, 1887.

To the Hon. GEORGE W. ROSS,
Minister of Education.

SIR,—Permit me to ask your acceptance, with reference to its possible introduction into the schools of Canada, of a copy of the "Leading Facts of English History," which I herewith send by post.

Although not an Englishman I have spent a number of years in England, and have given much time to the study of English history and institutions.

If on due examination you find the book suited to your middle classes in High Schools I shall, of course, be much gratified to receive such an inducement for my work.

Yours, etc.,
D. H. MONTGOMERY.

Boston, September 30th 1887.

Hon. George W. Ross.

Dear Sir,—We take pleasure in sending you a copy of Montgomery's Leading Facts of English History, a new edition of which is just off the press. The first edition was very highly esteemed by many of our best critics and teachers, but was too much in outline for regular class use. This edition is designed to combine with the excellencies of the other the practical features required for the class-room. We expect it to do very well indeed on this side the line.

Very truly yours,

GINN & CO.

Toronto, 7th October, 1887.

My Dear Sir,—I have just received your English History, which I expect to peruse in the course of a few days. As you desire its introduction into our Canadian schools, it occurred to me that I might as well dispose of that request by stating that the list of text-books authorized this year is not intended to be changed for several years to come. This determination has been arrived at in the interest of the schools particularly, as frequent changes heretofore were found to have had an injurious effect.

Yours truly,

GEO. W. ROSS.

D. H. Montgomery, Esq.,
Care of Messrs. Ginn & Co.,
7 Tremont Place, Boston, Mass.

DRAWING BOOKS.

54 Front Street West,
Toronto, March 30th, 1885.

Hon. G. W. Ross, LL.B.,
Minister of Education,
Education Department.

Dear Sir,—We herewith take the liberty of making application for right to re-publish the new authorized "Canadian Drawing Course" and "Jeffers' Primer of Canadian History," also for a copy of the terms upon which these books may be re-published.

We have the honour to be, Sir,
Your obedient servant,

W. J. GAGE & CO

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54 Front Street West,
Toronto, April 28th, 1886.

Hon. G. W. Ross, LL.B.,
Minister of Education,
Toronto.

Dear Sir,—Some time ago we took the liberty of placing before you our request for permission to publish the Canadian Drawing Books. We have not yet been favoured with a reply. May we ask if our request will be honoured with your kind consideration.

Yours faithfully,

W. J. GAGE, & CO.

TORONTO, 29th April, 1886.

DEAR SIRS.—Your letter of the 28th instant in which you ask permission to publish the Canadian Drawing Books, duly received. You are no doubt aware that under the new regulations, the copyright of every book authorized after the date of said regulations must be vested in the Education Department. By regulation 290 it is further stated that "all authorized text-books may be published by any firm of publishers in Ontario, on the payment to the original publishers of such sum or sums of money as may be agreed upon by arbitrators to be appointed for that purpose by the publishers concerned and the Minister of Education respectively." From these Regulations it will appear to be the policy of the Department (1) to hold the copyright of every authorized text-book; and (2) to allow similar privileges to every publisher in regard to the right of publication. In justice to those who have surrendered their copyright, and who in this way have complied with the regulations of the Department, it is but reasonable to require that any publisher desiring to publish text-books, the copyright of which is so surrendered, should place the Department in a position to extend to them the privilege which he asks for himself. So soon then as you place the Department in this position I shall take immediate steps to appoint the arbitration referred to in section 290, in order that you may have the privilege of publishing the said Drawing Books.

Yours truly,

GEO. W. ROSS.

Messrs. W. J. GAGE & Co.,
Publishers, etc.,
Toronto.

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54 FRONT STREET WEST,
TORONTO, October 18th, 1886.

Hon. G. W. ROSS, LL.B.
Minister of Education.

DEAR SIR,—I took the liberty of calling at the Education Department to-day, but regret I had not the pleasure of seeing you.

Permit me herewith to submit a sample copy of a new work on chemistry by Mr. Kirkland, Principal of the Normal School, Toronto, and if found satisfactory shall be glad to learn of its authorization for use in the High Schools.

May I again ask your kind consideration to our application, made about eighteen months ago, for permission to re-publish the "Canadian Drawing Course." In reply to that application we were advised that the conditions upon which these books could be re-published would be placed in our hands very shortly, and that as soon as we complied with the terms we would at once have permission to re-publish. Not hearing from you after the lapse of considerable time we took the liberty of repeating our request, and shortly before your visit to England we were advised that we could not have permission to re-publish without first surrendering our own copyrights. With reference to this permit us to say that we are sure you will not press upon us any condition of this kind, which would on examination appear to be most unfair.

To five other firms permission has been awarded to publish newly authorized text-books without surrendering copyrights, excepting in a single case. The Methodist Book Room publish a newly authorized text-book, but surrendered no other copyright. Copp, Clark & Co. publish the newly authorized history, but surrender no other copyrights, although they have a number of books which are authorized in Ontario. Hunter, Rose & Co. publish the newly authorized readers, they have given up no other copyrights. The Canada Publishing Co. publish the drawing books referred to, yet they have only given up the copyright of one other book—"Jeffers' History of Canada"; at the same time they have withheld copyrights of a large number of books which are authorized in Ontario; for example geography, histories, etc.

We would, therefore, ask your kind consideration to the above facts which have, no doubt, escaped your notice, and in view of regulation No. 290, which says "all authorized

text-books may be published by any firm of publishers in Ontario, on the payment to the original publishers of such sums of money as may be agreed upon by the arbitrators," it would seem to be a great hardship that we alone should be denied the privilege of re-publishing these newly authorized books because we do not give up to the Education Department of Ontario the copyrights of our books which are adopted and used in every other Province of the Dominion.

So far as the preparation of new text-books is concerned we are quite prepared to accept a similar position in relation to the copyright question as other publishers, but it is simply impossible for us to surrender the copyright of a book which has been used for years so largely outside of Ontario.

The justice of our request will, we trust, at once commend itself to your kind consideration. We would, therefore, intimate our readiness to comply with the necessary conditions for the publication of the "Canadian Drawing Course"; at the same time, asking permission to re-publish the Public School History of Canada, and the newly authorized text-book on Hygiene.

I have the honour to be, Sir,
Your obedient servant,

W. J. GAGE & CO.

TORONTO, 26th October, 1886.

DEAR SIRS,—I have before me your favour of the 18th instant and a sample copy of the new work on Chemistry, by Mr. Kirkland, for which you ask authorization. From a cursory examination of the book I believe it is well fitted for the purpose for which it is intended, and as soon as I am able to take up the whole course of text-books for High Schools I shall consider the propriety of placing it on the authorized list. I am glad to observe that you are quite prepared to enter into the same agreement for the authorization of this book as we require of other publishers in regard to copyrights of recent text-books. This will relieve us of an initial difficulty; so nothing remains now to consider save the suitability of the book for High School purposes.

I hope to be able, in a very short time, to take preliminary steps for extending the privilege of publishing all books recently authorized, including the Drawing Course, to such publishers as have made application therefor.

Yours truly,
GEO. W. ROSS.

Messrs. W. J. GAGE & Co.,
Toronto.

TORONTO, December 21st, 1887.

Hon. G. W. ROSS,
Minister of Education.

DEAR SIR,—Agreeably to your suggestion we herewith forward a proposition for the publication of a series of Drawing Books at lower rates than any already issued.

1st. We would be prepared to issue a series equal in every respect to the Canadian Drawing Books, containing the same number of pages, printed on the same paper.

2nd. Said Drawing Books to be prepared under the supervision and approval of the Education Department, by competent authors.

3rd. In consideration of our having exclusive sale of these proposed books for one year and of their being the only authorized books allowed to be used in the schools, we will be prepared to fix the retail price at four cents, giving the same discounts as are now given to the trade; and, at the expiration of one year, be prepared to allow any other publisher to enter upon the publication, without incurring any costs through arbitration.

We should be prepared to furnish the necessary bonds as to the carrying out of the above proposal, should it meet with your favourable consideration; and, further, be prepared to have the books ready for the opening of schools within six months from present date.

In connection with the above proposal, permit us to make application for the publication of the Public School Arithmetic, Public School Grammar, and Public School Geography. We do not desire, in view of the terms of agreement with the present publishers, to enter upon the publication of the above mentioned books until the 1st of September. But as it will require at least a year to prepare the Public School Geography, and a considerable time will be occupied in arbitration, we are hopeful that you will approve of the application we now make and permit us to enter upon arbitration for right of publication, so that we may commence as soon as the proper time arrives.

We have the honour to be, Sir,
Your obedient servants,

W. J. GAGE & CO.

TORONTO, 4th January, 1888.

MY DEAR SIRS,—I am now considering what should be done with your proposition of the 21st ultimo. You shall hear in regard to the matter before long.

Yours truly,

GEO. W. ROSS.

Messrs. W. J. GAGE & Co.,
Publishers, etc., Toronto.

TORONTO, April 14th 1886.

DEAR MR. ROSS,—Mr. Reading was here to-day; but, as you were out of the city, we were not able to see you. His idea as to the new drawing series for the H. S. Department is a text-book containing a full treatment of the whole course and explaining all the principles and their application. This would give, besides the text, a sufficient number of *Examples* for the purposes of the work.

Accompanying that, as a Companion Book, would be a *Practice Book*, somewhat after the style of a Drawing Book, containing problems and solutions, for samples, with blank spaces for the students' work. This would, thus, comprise a Prospective Drawing Book, on the system of the text-book above referred to.

I thought I would ask how this struck you; and whether, if all the conditions already discussed were fulfilled, it would be satisfactory. Mr. R. will prepare prospectus pages at once.

Yours very truly,

H. HOUGH.

TORONTO, 20th April, 1886.

MY DEAR MR. HOUGH,—Your scheme as outlined by Mr. Reading *re* Drawing Books duly received. I am strongly of the opinion that the scheme is not practical, nor would it be in harmony with the plans already laid down. I shall be in town until Thursday evening.

Yours truly,

GEO. W. ROSS.

H. HOUGH, Esq.,
Grip Printing & Pub. Co., Toronto.

TORONTO, 29th January, 1887.

MY DEAR SIR,—In order to correct all misapprehension as to the responsibility of the Department for the new Drawing book, would you kindly send a copy of the circular agreed upon, to the trade, as well as to the High School masters.

Yours truly,

GEO. W. ROSS.

H. HOUGH, Esq.,
Grip Printing & Pub. Co., Toronto.

TORONTO, 31st August, 1887.

DEAR MR. ROSS,—I mail you a copy of No. 4 "Object Drawing." I think you will agree with me that the subject is admirably well treated, and that this book is very cheap at 20c., too cheap for the publishers. It certainly vindicates the "rashness" to which you referred yesterday, in authorizing the series before seeing all the books.

Respectfully,

H. HOUGH.

OFFICE OF THE EDUCATIONAL JOURNAL,
TORONTO, Ont., August 31st, 1887.

THE EDUCATION DEPARTMENT, ONT.,
Toronto.

Be good enough to forward us the usual certificate of authorization of "The High School Drawing Course," (Books 1, 2, 3, 4 and 5) and of "Public School Temperance."

And oblige respectfully,

THE GRIP PRINTING & PUBLISHING CO.
H. H.

OFFICE OF THE QUEEN'S PRINTER, PARLIAMENT BUILDINGS,
TORONTO, September 22nd, 1887.

DEAR SIR,—I have received from the *Grip* Printing and Publishing Company, sample copies of parts Nos. 1, 2, 3 and 4 of "The High School Drawing Course," and have carefully examined the quality and weight of the paper and mode of doing up. I find that in all respects the materials used, as well as the manufacture, are in accord with the terms of the agreement entered into by said company.

I have also gone into the cost of production and consider that, if the sample standard is kept up, the prices are fair both for the publishers and the public.

I have the honour to be,
Your obedient servant,

G. E. THOMAS,
Asst. Queen's Printer.

Hon. G. W. ROSS,
Minister of Education, Toronto.

EDUCATION DEPARTMENT,
TORONTO, September 24th, 1887.

GENTLEMEN,—Books Nos. 1, 2, 3 and 4 of "The High School Drawing Course" have been examined by the Assistant Queen's Printer, who reports to this Department that "the material used, as well as the manufacture of the books, are in accord with the terms of the agreement entered into into between your Company and this Department."

Upon this report the Department sanctions the sale of this edition of these books to High Schools.

Your obedient servant,

ALEX. MARLING,
Secretary.

THE GRIP PUBLISHING CO.,
Toronto.

OFFICE OF THE EDUCATIONAL JOURNAL,
TORONTO, 31st January, 1888.

The Hon. GEO. W. ROSS, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—By this mail I beg to hand you two copies of No. 5 H. S. Drawing Course, Industrial Design. I think in the matter of manufacture and appearance it will meet your approval. And permit me to remark, comparing this book with others in the same general category, that if it is not a cheap publication at 20 cents retail, the Education Department of Ontario has missed its calling. I am hardly prepared to say, however, that I believe it has.

Respectfully,

H. HOUGH,
For *Grip* Printing and Publishing Company.

TORONTO, May 5th, 1886.

Hon. GEO. W. ROSS,
Minister of Education,
City.

DEAR SIR,—We understand that, by recent Education legislation the copyright for all text-books is now held by the Government and that, complying with the necessary provisions, it is within the power of any publisher to become publisher of the authorized text-books of this Province.

Desiring to avail ourselves of this measure, we here beg to make application to become publishers of the Ontario series of Drawing Books, the recent work on Hygiene, and Jeffers' "Canada."

Kindly furnish us with particulars of the steps necessary for us to take in order to act in this matter.

Yours truly,

J. S. ROBERTSON & BROS.

TORONTO, May 7th, 1886.

DEAR SIR,—I am in receipt of your favour of the 5th instant, in which you ask for permission to publish certain authorized text-books, the copyright of which is held by the Department.

I have given instructions to the officer of my Department, under whose supervision all text-books are published, to make the necessary inquiries regarding your facilities for the work which you are desirous of undertaking, and will let you know my decision, as soon as he makes his report.

Yours truly,

GEO. W. ROSS.

Messrs. J. S. Robertson & Bros.,
Subscription Book Publishers,
Toronto.

Memo. for Hon. the Minister of Education.

As directed I called upon Messrs. J. S. Robertson & Bros. at *Mail* buildings, *re* subject of your letter of 7th, in reply to theirs of 5th.

They are "subscription book Publishers," and have no printing or book-binding establishment, but give such work out to *tender*.

They would give text-book work out in same way, and consider they are "Publishers" though not "Printers" or "Bookbinders".

Mr. Robertson cited the Canada Publishing Company as not printing and binding all the books of which they are the publishers.

Respectfully submitted,

H. M. WILKINSON.

May 10th, 1886.

Toronto, August 27th, 1886.

Hon. Geo. W. Ross,
Minister of Education,
City.

Dear Sir,—We had expected to hear from you before this, *re* the matter of Drawing Books, as per our letter of some two months since. Would you kindly give us full particulars at once. We believe we can say definitely that we can produce Drawing Books to sell at five cents a copy to the public.

We would also make application for the publication of the new English Canadian History by Messrs. Robertson and Adam, which we will undertake to produce to sell to the public at 25 cents each.

Just so soon as matters are forwarded by yourself, we are prepared to supply the necessary bonds, security etc,, as required by the Department.

Awating a reply, we are

Yours truly,

J. S. ROBERTSON & BROS.

Toronto, September 18th, 1886.

Dear Sir,—I beg to acknowledge the receipt of yours of 27th ultimo, and to say that at the earliest opportunity I shall endeavour to make arrangements for the arbitration required under the agreement with the publishers of the Drawing Book.

Yours truly,

GEO. W. ROSS.

J. S. Robertson & Bros.,
Publishers, Toronto.

TORONTO, October 7th, 1886.

Hon. GEO. W. Ross,
Minister of Education,
City.

DEAR SIR,—Noting contents of yours of 18th ultimo, we will be pleased to have you name as early a day as convenient for the arbitration required in the agreement with the publishers of the present Drawing Books.

You will understand the imporance of having this matter closed at as early a date as possible, so that the public may get the full benefit of the important reduction that we propose making in the publishing of this book.

Our application having been before the Department for now nearly six months, we will hope for an early reply.

Yours truly,

J. S. ROBERTSON & BROS.

Re J. S. ROBERTSON BROS.

TORONTO, January 6th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

DEAR SIR,—We beg to enclose you draft bond such as you require. Kindly look over same and fill in blanks.

We do not see that the Canada Publishing Company can be compelled to execute, as they have already executed the agreement, and they are bound already, but it is as well to have them execute and be bound with Robertson Bros.

When approved of please return to us, and we will see the three parties about it.

As to the question of arbitration which you mentioned to Mr. Paterson yesterday, we would submit to you the following names for your consideration. In our opinion any of these gentlemen would admirably suit:—

John Winchester, Official Referee; T. D. Delamere; A. H. Marsh; Ald. Wm. Roaf; G. H. Watson; O. A. Howland; Alf. MacDougall.

We have, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

TORONTO, 7th January, 1887.

DEAR SIRS,—As I propose proceeding with the arbitration provided under the agreement with the publishers of the drawing books, will you be good enough to let me know the name of the arbitrator whom you expect to act on your behalf. A bond will be submitted to you also for signature as soon as it is ready.

Yours truly,

GEO. W. ROSS.

Messrs. J. S. ROBERTSON & BROS.,
Toronto.

TORONTO, January 12th, 1887.

Hon. G. W. Ross,
Minister of Education,
City.

DEAR SIR,—We beg to acknowledge with thanks receipt of yours *re* drawing books. Be kind enough to let us know the nature of the arbitration in the matter, so that we can the more intelligently appoint an arbitrator; also oblige by sending us a copy of the bond for examination.

Yours truly,

J. S. ROBERTSON & BROS.

TORONTO, 10th February, 1887.

MY DEAR SIR,—I have just received from the solicitor of my Department the form of bond which Robertson Bros. will be asked to execute before proceeding with the arbitration. You might consult with Mr. John A. Paterson, who acts for me in this matter, if you have any suggestions to make. Please do not delay attending to it, as I want action taken at once.

Yours truly,

GEO. W. ROSS.

S. G. BEATTY, Esq.,
Toronto.

TORONTO, 10th February, 1887.

MY DEAR SIR,—I have sent your draft of bond to Mr. Beatty, with the intimation that he might consult you in regard to any alterations desired.

I want the Department to be fully protected against costs and delay.

Have the arbitrators the power of a court to say whether evidence suggested on certain points might be entertained if it should involve unreasonable expense or unnecessary delay in procuring witnesses?

Urge Beatty to close the matter as soon as possible.

Yours truly,

GEO. W. ROSS.

JOHN A. PATERSON, Esq.,
Barrister, etc.,
Toronto.

TORONTO, January 27th, 1887.

Hon. G. W. ROSS,
Minister of Education,
City.

DEAR SIR,—Did you receive ours asking for particulars *re* matter of arbitration on drawing books?

We ask the question for the reason that no response has been received up to this late.

Yours truly,

J. S. ROBERTSON & BROS.

TORONTO, February 15th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—I have, in accordance with your instructions of the 10th of February, waited on Mr. Beatty, and after conference with him and seeking to have the Department fully protected, as you desired, I have put in a party of the fourth part, and also clauses which will, I think, meet your views. Mr. Beatty agrees to them.

What you wish to avoid, I understand, is any trafficking by Robertson Bros. in the benefit of this contract for publishing.

In respect to your question, if the arbitrators have the power to restrict evidence, I beg to say to you that they have the right to say and to reject what evidence adduced is irrelevant or unnecessary, and tending to additional expense.

Yours truly,

JOHN A. PATERSON.

CANADA PUBLISHING COMPANY AND ROBERTSON BROS.

TORONTO, March 3rd, 1887.

Hon. G W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—We enclose your agreement as requested. We are not quite sure of the blanks we have left. Will you kindly get them filled in and send to Robertson Bros. as you think proper.

Yours truly,

KERR, MACDONALD, DAVIDSON & PATERSON.

TORONTO, March 4th, 1887.

DEAR SIRS,—I send you herewith a draft agreement which you are expected to sign in order to participate in the right of publishing the Canadian drawing books. The solicitor of my Department is Mr. John A. Paterson, of Kerr, Macdonald and Co. Kindly see him at your earliest convenience, and have the matter closed so that I might appoint an arbitrator.

Yours truly,

GEO. W. ROSS.

Messrs. ROBERTSON BROS.,
Toronto.

TORONTO, March 30th, 1887.

Hon. G. W. Ross,
Minister of Education, City.

DEAR SIR,—Replying to your esteemed favour of 28th instant, would say that yours of 4th instant was in due course received by ourselves and has received our consideration.

We have called upon your Solicitor, Mr. John Paterson, several times in regard to certain clauses in the agreement, and are now awaiting information from him—which he

states to us he is in turn awaiting from yourself, before we can definitely go on with the matter. This information promptly supplied to us, then we will be prompt in naming our arbitrator and going on with the negotiations.

Yours respectfully,

J. S. ROBERTSON & BROS.

Re Canada Publishing Co. Arbitration.

Toronto, March 31st, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education, Toronto.

Dear Sir,—Mr. J. S. Roberson prefers to make a deposit of $500 in your hands to cover costs of arbitration, to be further supplemented if arbitration proceedings are prolonged. Do you see any objection to this?

Yours, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON,

Toronto, April 2nd, 1887.

My Dear Sir,—I see no objection to the proposed deposit by Robertson Bros. The only thing to be observed is that some guarantee should be given that should the amount prove insufficient the balance will be put up or proceedings stayed when the fund is exhausted.

Yours truly,

GEO. W. ROSS.

John A. Paterson, Esq.,
Toronto.

Re Robertson Bros. and Drawing Books.

Toronto, May 3rd, 1887.

Hon. Geo. W. Ross,
Minister of Education, Toronto.

Dear Sir,—We saw Mr. Robertson to-day. He says he will attend to the matter in a day or two. He offers as a reason that he is extremely busy with other matters.

Yours, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Robertson and Canada Publishing Co.

Hon. G. W. Ross, M.P.,
Minister of Education, City.

Dear Sir,—We have again tried to get some arrangement to push on this arbitration. The Robertsons say they want to get a copy of the agreement between your Department and the Canada Publishing Company as to the Drawing Books, so that they may clearly understand their position in the future.

I said to them that I would ask you for a copy of same. Their solicitors are Stevenson, Dixon & Taylor, and the request comes from these solicitors to me.

I wait your reply.

Yours, etc.,

JOHN A. PATERSON.

TORONTO, May 27th, 1887.

GENTLEMEN,—I am requested by the Solicitor of my Department to send you a copy of the agreement with the Canada Publishing Company, respecting the Public School Drawing Books, which please find herewith.

Yours truly,

GEO. W. ROSS.

Messrs. STEVENSON, DIXON & TAYLOR,
Toronto.

Re ROBERTSON BROS. ARBITRATION.

TORONTO, June 3rd, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education, City.

DEAR SIR,—Mr. Stephenson, the Solicitor of Mr. Robertson, called upon me yesterday, and asked me if it would be agreeable to the Department of Education that the arbitration should proceed upon the basis of settling what the costs of authorship and preliminary expenses of the Drawing Books were, and not that the arbitration should find what would be equivalent to the royalty and costs of authorship and preliminary expenses.

His client, he says, would prefer to pay ten per cent. royalty and what the arbitrators would find to be the proper amount for authorship and preliminary expenses, instead of paying a gross sum covering royalty and these costs and expenses.

The agreement for arbitration as now drawn, provides for the latter method of proceeding. I told him that I did not know fully your mind on the matter, and that I would communicate with you, and if you would like an interview with Mr. Stephenson, he would be happy to come up and see you at any time you would appoint after Monday next, and if you thought proper I would come up also. Kindly let me hear from you as to this.

Yours truly,

JOHN A. PATERSON.

TORONTO, 6th June, 1887.

MY DEAR SIR,—I cannot see how we can vary the terms with the Canada Publishing Company without their consent. The agreement is binding on both parties. How could I covenant with Robertson Bros. for any variation of that agreement without first having the consent of Beatty? Besides Copp Clark, and Rose have signed a similar agreement. In event of an arbitration with the Canada Publishing Company for the Drawing Course, I expected certain principles to be settled which would guide me in future arbitrations. To concede to what Robertson Bros. ask would defeat this object, so that as a matter of policy as well as law, I cannot entertain, even if I would, their proposition.

Yours truly,

GEO. W. ROSS.

JOHN A. PATERSON, Esq.,
Toronto.

Re Drawing Books.

Toronto, June 28th, 1887.

The Minister of Education,
Normal School Buildings,
Toronto.

Dear Sir,—We have waited now for some ten days for your decision in regard to this matter, and our clients, Messrs. J. S. Robertson & Bros., being very anxious to get on with their work, feel that the matter should be pushed with more expedition than has been shewn. We are surprised that, after the repeated promises you have made to write us, we have not heard yet from you. Trusting you will oblige us by an early mail,

We remain,
Yours respectfully,

STEPHENSON, DICKSON & TAYLOR.

Re Drawing Book Arbitration.

Toronto, July, 2nd 1887.

The Minister of Education,
Normal School Buildings,
Toronto.

Dear Sir,—Since our Mr Stephenson first saw you in reference to this matter, when you promised to write us in a day or two, we have telephoned you, when you again promised to write us. Not receiving a reply after a week's delay, we wrote you asking the reason why, and not having received any word as yet, now nearly three weeks, can only say that we feel compelled, unless this matter is at once put through, to expose the whole course of your action. We know full well the power you have in your hands, under the agreement between the Government and the Canada Publishing Company, but we did not think that a man holding the honourable position which you do, would so far abuse his position as to use anyone in the manner in which you have treated our clients in this matter.

We do not desire to make any unnecessary ado, but feel compelled as a matter of justice not only to ourselves but the public at large, whose servant you are, to place this matter in a clear light before them.

Trusting you will feel disposed to go on at once and so far as possible to remedy the evil already done.

We remain
Yours respectfully,

STEPHENSON & DICKSON.

Toronto, 4th July, 1887.

Gentlemen,—The Robertson matter is being disposed of as rapidly as circumstances will admit, and you need not think that any dragooning, such as you threaten in your letter of the second instant, will hasten it one moment. If you have anything to expose or give to the press, pray do it at once. If you intend your letters to be regarded as professional, in future, and in the interests of your client, be good enough to confine yourself to a business-like discussion of the question involved; if, however, you intend your letters for a political effect to be used hereafter, then I have no advice to offer.

Yours truly,

GEO. W. ROSS.

Messrs. Stephenson, Dickson & Co.,
Barristers,
Toronto.

TORONTO, 2nd July, 1887.

GENTLEMEN,—I delayed replying to your enquiry, until I obtained some information which was necessary, in order to come to a proper decision in the matter. I am willing that Robertson Bros. should be allowed to print and publish the Public School Drawing Course Books Nos. 1-5 on payment to the Canada Publishing Co. of a royalty of 10 per cent. on the retail price of the said books. The other terms to be settled by arbitration as per indenture, and you will be good enough to point out to your client that this privilege will not apply to any one book of the Drawing Course, but only to the whole series.

I would observe further that the regulations of the Department applying to text-books—see sections 284-292—will apply in this case.

Yours truly,

GEO. W. ROSS.

Messrs. STEPHENSON, DICKSON & TAYLOR.
Toronto.

Re DRAWING BOOK ARBITRATION.

TORONTO, July, 5th 1887.

The Honourable THE MINISTER OF EDUCATION,
Normal School Buildings,
City.

HONOURABLE SIR :—In reply to your favour of late date, we beg to say that we are much pleased to find that you have seen your way clear to grant us the change asked in agreement to submit to arbitration herein.

We have written your solicitors, and as there is nothing but a merely formal proceeding to be gone through preparatory to going on with the arbitrament, we trust no delay will now be had, and that we will be able to go on at once.

Awaiting the amended agreement.

We remain
Very respectfully yours.

STEPHENSON, DICKSON, & TAYLOR.

Re DRAWING BOOK ARBITRATION.

TORONTO, July 6th, 1886.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—We have received a letter from Mr. Stephenson, solicitor for J. S. Robertson & Bros., in which he says you have accepted his proposition to amend the agreement so as to provide for a royalty to be paid of ten per cent., and the arbitration to cover the costs of authorship, preliminary expenses, etc.

They have also sent us the former agreement for amendment.

Please let us know if you wish us to amend this agreement, and also instruct us as to what should be done and we will see that it is carried out.

Yours etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Drawing Book Arbitration.

Toronto, July 9th, 1886.

The Hon. The Minister of Education
Normal School Buildings,
City.

Dear Sir:—Your solicitors have sent us the agreement herein, which we have returned approved.

As our clients have a number of orders for the fall trade, pending the arbitration we would ask to be allowed to deposit such sum as you may deem sufficient to cover the award of the arbitrators herein, and that they be allowed to proceed at once with the publication of the said books.

Awaiting your reply.

We remain,
Respectfully yours,

STEPHENSON, DICKSON & TAYLOR.

Toronto, July 22nd, 1887.

Gentlemen,—Mr. Paterson, Solicitor of my Department, is away, I understand, for ten days. I have sent to his office for a copy of the draft agreement, and if I can satisfy myself as to its suitability will not wait for his return, otherwise the matter cannot be closed for a day or two.

Yours truly,

GEO. W. ROSS.

Messrs. Stephenson & Dickson & Co.,
Barristers,
Toronto.

Toronto, July 22nd, 1887.

The Honourable The Minister of Education,
Normal School Buildings, Toronto.

Dear Sir,—In reply to your favour of this date I beg to state that we returned the draft to Mr. Paterson some time ago without amendment, and he replied that he had sent the same to the Canada Publishing Company. Since then we have heard nothing from him or about the matter. We will be pleased to give any assistance we can in this matter in order to get the matter through, and await an early reply from you.

Yours respectfully,

STEPHENSON, DICKSON & TAYLOR.

Toronto, 23rd July, 1887.

Dear Sirs,—Please send to me early on Monday morning by messenger the draft agreement left with your Mr. Paterson, respecting the arrangements for publishing the Drawing Course made between the Department, Canada Publishing Company and Robertson Bros.

Yours truly,

GEO. W. ROSS.

Messrs. Kerr, Macdonald & Co.,
Toronto.

TORONTO, July 25th, 1887.

The Hon. G. W. Ross,
Toronto, Ont.

DEAR SIR,—Your letter just received. In the absence of Mr. Paterson we do not know exactly what you want, but think that enclosed agreement is one required.

Yours, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

TORONTO, 29th July, 1887.

MY DEAR SIR,—Please look this over and report to me to-morrow morning if convenient, as I leave the city in the afternoon.

Yours truly,

GEO. W. ROSS.

S. G. BEATTY, Esq.,
Toronto.

CANADA PUBLISHING COMPANY (LIMITED),
TORONTO, July 29th, 1887.

SIR,—In reply to yours of to-day, *re* enclosed agreements, Mr. Beatty is away at present but will return in a few days.

Before leaving he had an interview with your solicitor, Mr. Paterson, and presume from the notes made in the first agreement drawn up that he wishes these changes inserted in the agreement.

Yours truly,

For the CANADA PUBLISHING CO. (LIMITED),
B.

Hon. G. W. Ross,
Minister of Education,
Toronto.

Re DRAWING BOOKS.

TORONTO, August 8th, 1887.

The Honourable THE MINISTER OF EDUCATION,
Normal School Buildings, Toronto.

DEAR SIR,—I am in receipt of Mr. Paterson's letter of Saturday, the 5th instant, enclosing me the agreement with an amendment to the same as approved by us, made by the Canada Publishing Company, to the following effect, viz.: That our clients shall pay Royalty upon the declaration of the printer on the first days of January, April, July and October in each year, upon all books printed prior to said dates, whether sold or not. I have submitted the same to our clients and expect it returned to me this afternoon, when I shall forward it at once to your solicitor. Now, as Mr. Paterson is out of town and likely to be gone a few days would you kindly ask that the agreement be engrossed at once and signed, and we can then proceed on Mr. Paterson's return with the arbitration at once.

Yours very truly,

GEO. H. STEPHENSON.

Re Drawing Book Arbitration.

Toronto, August 8th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—On Saturday I sent the draft agreement with Mr. Beatty's alterations to Mr. Stephenson, Mr. Robertson's solicitor, for him to approve of it, and asked him to return it to me to-day, so that I might have it engrossed and executed. I have telephoned this morning but can get no satisfaction. I will have to be out of town to-morrow. I will be back on Thursday and I will then get it completed.

I would like to have got it done this morning, however, but I find it impossible. I have taken this opportunity of letting you know how the matter stands.

Yours truly,
JOHN A. PATERSON.

Re Drawing Book Arbitration.

Toronto, August 12th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

Dear Sir,—I have to-day arranged with Mr. Robertson's solicitor as to the draft. It has been settled and I have had it engrossed in triplicate and I now enclose it to you. Would you kindly execute it before a witness opposite the third seal, and return it to me to-morrow? and I will get Robertson Bros. and the Canada Publishing Company to execute. Mr. Robertson's solicitor accepted the amendment we made, and you will notice that I have put in as an amendment that they are to publish the five parts simultaneously. I send it to you now because I understand that you are going out of the city to-morrow.

Will I notify the different parties of the appointment of your arbitrator, Mr. Miller? This should be done under the sixteenth paragraph of the original agreement, and then they must, within ten days, appoint their arbitrator.

Yours truly,
JOHN A. PATERSON.

Re Drawing Book Arbitration.

Toronto, September 1st, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—I beg to advise you that on the 23rd August the Canada Publishing Company executed the agreement—the agreement having been previously executed by Messrs. Robertson Bros. and your Department. Upon the same day, the 23rd August, we wrote the solicitors of J. S. Robertson Bros. to place in your hands, or in our hands, the $500 provided for by the agreement as security for the costs and expenses of arbitration. Not having received any reply we wrote them on the 29th August, asking what delay there was, and again requesting them to deposit the $500.

We have not yet given over any copy of the agreement to J. S. Robertson Bros. as they have not yet complied with the preliminary conditions of the agreement, being

the deposit of the said sum of money, nor have we notified them as to the appointment of your arbitrator, as they are not entitled to receive any notice until they make the deposit. The deposit must be preliminary to any step we may take as to the arbitration. We beg to advise you of the above so that it may be a matter of record in your department.

We have the honour to be,
Your obedient servants,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Drawing Book Arbitration.

Toronto, September 2nd, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—Following our letter of yesterday's date we have to report that we received to-day the enclosed cheque for $500, in accordance with the requirements of the arbitration agreement.

We have given notice of the appointment of Mr. Miller as your arbitrator.

Yours truly,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Drawing Books Arbitration.

Toronto, September 5th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—We beg to advise you that Messrs. Robertson Bros. have notified us of the appointment of their arbitrator, they have appointed Judge Morgan.

We have not yet received any notice from the Canada Publishing Co., but, no doubt, will, in due course.

We have the honour to be,
Your obedient servants,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Drawing Books Arbitration.

Toronto, September 29th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—The arbitrators met this morning and extended the time for making the award so as to keep the matter alive. We hope to have a hearing of the matters involved during the latter part of this month. In Mr. Leys' absence we could not fix a definite date, but it will be arranged when Mr. Leys returns.

We have, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Drawing Books Arbitration.

Toronto, December 21st, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—When we last advised you as to this the arbitrators had allowed the arbitration to lapse on account of their omitting to sign an extension of time on the back of the submission; we then proceeded under the statute to get the Court to sanction an enlargement of that time. Under ordinary circumstances the law is perfectly clear; the Court will always give new life to a lapsed arbitration if it is a mere slip of the arbitrators. We took steps the very next day to bring the matter before the Court, feeling that in the interest of the public the arbitration shonld be set on its legs again, so to speak, and have life and energy infused into it.

The Canada Publishing Company, being naturally desirous of holding their present monopoly, are resisting this application with great perseverance. They allege and offer to prove that J. S. Robertson Bros. are practically insolvent and, therefore, unable to pay what may be awarded and unable to give the necessary security for the royalty.

As we at present understand it, we do not think that this a good reason for the Court refusing to reinstate the arbitration; still they are making a strong fight in that direction.

Of course, if the arbitration lapses on account of the Robertson Bros. real or threatened insolvency, we do not see that any injury would be done to the Department; still, however, we are anxious that the matter be settled.

The application was enlarged, yesterday, formally upon the ground that Robertson Bros. refused to answer questions relevant to their insolvency when subpœnæd for examination before a special examiner. The Robertson Bros. declined to answer, on the advice of their counsel, these questions, and we, of course, were not interested in what they should think proper to answer, as we are not in any sense acting for them. An application was then made to compel the Robertson Bros. to answer these questions; it was argued yesterday before Mr. Justice Street, and on behalf of your Department we took the position that the inquiry as to the insolvency of the Robertson Bros. was wholly irrelevant to the matter at issue. Mr. Justice Street thought, however, that the Robertson Bros. should answer these questions, as these questions might be relevant, although he did not point out exactly how it would be.

The matter then stands for the Robertson Bros. to be examined and, as the Christmas vacation intervenes in two days, the motion to extend the time will not be argued until January.

We put this matter before you so that its present position may be on record in your Department.

We have the honour to be,
Your obedient servants,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Canadian Drawing Books Arbitration.

Toronto, December 30th, 1887.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
City.

Dear Sir,—We have considered the 11th paragraph of the agreement, under which you propose to arbitrate, and notice that the whole of the cost of the arbitration is to be borne by the Education Department. We have drawn an appointment which you will kindly fill up and sign and return to us and we will then give the necessary notice to the Canada Publishing Co.

We are told to-day that Robertson has withdrawn from the present arbitration, and it will therefore be open for Mr. Gage or any other publisher to come in. What do you think, instead of proceeding with an arbitration to fix the retail price. Let Gage come in under the other arbitration and take his share of the business after paying Mr. Beatty the proper sum, and then let him publish his book, if he can, at the low price mentioned by him, and if he does not that will be a sufficient answer to this letter to you.

We have, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

TORONTO, 31st December, 1887.

MY DEAR SIR,—As Mr. Gage has made application for the privilege of publishing the Drawing Books under section 16 of the agreement with the publishers, and as Mr. Robertson has withdrawn I am willing that you, as Solicitor for my Department, should allow Mr. Gage to take Mr. Robertson's place, and that the same arbitrator should act on my behalf. It might save time, trouble and expense if this was done.

Please communicate with the other parties at once.

Yours truly,

G. W. ROSS.

JOHN A. PATERSON, ESQ.,
Barrister, etc.,
Toronto.

Re ARBITRATION.

TORONTO, January 4th, 1888.

The Hon. THE MINISTER OF EDUCATION,
Normal School Buildings, Toronto.

SIR,—Our clients, Messrs. J. S. Robertson and Brother, not being financially very strong, and this matter having got into the Courts, they fear it would be some time before any award could be made, they have decided, therefore, to withdraw from the same, for two very important reasons. Among others—first, because they think they can utilize their capital to better advantage by getting the immediate benefit therefrom in some other investment; and, secondly, because they object to expose their concerns to the public, as ordered by the Court.

You can easily understand why, from the above reasons, they desire to withdraw, as, should they be required to pay any considerable sum in the near future, owing to the present financial state of the country, it might very materially affect their business and do them serious damage.

We desire, however, to express our thanks to you for the very straightforward and business-like manner in which you have conducted your share in this matter.

Yours respectfully,

GEO. H. STEPHENSON,
Solicitor for J. S. Robertson & Bro.

Re Arbitration Canada Publishing Co. and J. S. Robertson & Bro.

Toronto, 4th January, 1888.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

Sir,—J. S. Robertson Bros. have withdrawn from this arbitration, and the arbitrators are, therefore, entitled to their fees, which have been settled between the arbitrators and J. S. Robertson Bros. at $75 for each arbitrator. You will, therefore, please settle this account, as per the order of the solicitors for J. S. Robertson & Bro. which is attached hereto. The solicitors for the Canada Publishing Company have waived their claim for costs against the fund. As to the balance of $275, we will arrange with Mr. Stephenson as to that hereafter.

Yours truly,

KERR, MACDONALD, DAVIDSON & PATERSON.

Re Arbitration Canada Publishing Co. and J. S. Robertson & Bro.

Toronto, 4th January, 1888.

Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

Dear Sir,—Please give a cheque to John Leys, Esq., for seventy-five dollars, his arbitration fees; also to Judge Morgan for same amount, and also to J. R. Miller, for same amount, all for similar services. Same to be paid out of deposit of $500 made by J. S. Robertson Bros. with you, to meet costs of arbitration—the balance to be held by you meanwhile until further disposition to be made.

Yours truly,

STEPHENSON, DAVIDSON & TAYLOR,
Solicitors for J. S. Robertson & Bro.

Re Drawing Book Arbitration.

Toronto, January 7th, 1888.

Hon. G. W. Ross, M.P.P.,
Minister of Education, City.

Dear Sir,—We have arranged with Mr. Stephenson that our costs shall be $185, and we enclose you order for the same. Kindly send us a cheque payable to our order for this sum. The balance of the $500 will be $90; please send us a cheque for that sum payable to G. H. Stephenson; this will close this matter in your books.

Re W. J. Gage.

Mr. Gage and his solicitor, Mr. Stephenson, called upon us yesterday, and they are very desirous of having an interview with you regarding the new arbitration that Mr. Gage has applied for. I told him that I would ask you to a day next week—some day after next Monday.

We have the honour to be,
Your obedient servants,

KERR, MACDONALD, DAVIDSON & PATERSON,

Re Drawing Book Arbitration.

Toronto, January 7th, 1888.

The Honourable
The Minister of Education.

Sir,—Having settled that your solicitor is entitled to the sum of one hundred and eighty-five dollars for his services in the above matter, I beg herewith to request you to pay the said amount to Mr. J. A. Paterson, and charge the same to account of deposit placed in your hands by my clients to cover costs, as per submission.

Respectfully yours,

GEO. H. STEPHENSON,
Solicitor for J. S. Robertson & Bro.

Toronto, 28th October, 1886.

Dear Sir,—We take the liberty of submitting to you samples of books 1 and 2 of the "Canadian Drawing Course," as now finished in new edition.

You will notice that the size of the books has been altered in accordance with our agreement with the Education Department, and made to correspond with Nos. 3, 4 and 5.

Trusting that they will meet your approbation, we are

Yours truly,

For the CANADA PUBLISHING (LIMITED).
S. G. B.

G. E. Thomas, Esq.,
Asst. Queen's Printer, City.

Office of the Queen's Printer,
Parliament Buildings,
Toronto, November 3rd, 1886.

Gentlemen,—I beg to acknowledge receipt of your letter of 28th October, accompanied with sample copies of books 1 and 2 of new edition of the "Canadian Drawing Course."

Hon. G. W. Ross, Minister of Education, desires me to express his satisfaction therewith.

I have the honour to be,
Your obedient servant,

G. E. THOMAS,
Asst. Queen's Printer.

The Canada Publishing Co.,
Front Street, Toronto.

National Art Training School,
Science and Art Department,
South Kensington, S. W., Nov. 3rd, 1886.

Dear Dr. May,—I have to thank you for the valuable and interesting books you were good enough to send over to me.

The Drawing Books are good and are carefully edited, but I still am of opinion that the Belgian system which deals with drawing from the first, when children are five years old, has much to recommend it over drawing on paper, especially as in this country at least, "cramming" for the Government papers is about all that is thought of in the freehand classes.

I am quite sure black-board teaching to classes is the best means of developing children's thinking powers.

I am, dear sir, yours truly,

J. SPARKES.

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43 Queen Square, Bloomsbury, W. C.
London, 8th day of November, 1886.

Dear Sir,—The five little books, the Canadian Drawing Course, which you have been good enough to send me as being specially designed for pupils in schools where trained teachers in drawing are yet unattainable, I think excellent for the purpose.

I might suggest if you publish a farther course that it would be interesting and would make a variety always desirable in teaching the young, if you could make use of other leaves and treat them as you have done the horse-chestnut in Book 2.

Miss Wilson and myself were much pleased with our visit to the Educational Department of Canada in the Colonial and Indian Exhibition, which you make so interesting by your explanations.

We considered all the elementary work exceedingly good, and the designs especially so. I wish we could have specified some of the works which pleased us most, but unfortunately we did not take any notes at the time.

I took the letter of introduction with me to the Educational Department at Toronto. Unfortunately the official gentleman to whom it was addressed (the name I have forgotten) was away ; my friend and myself, therefore, went through the museum, penetrating into one or two of the empty schoolrooms.

I am, dear sir,
Yours faithfully,

LOUISA GANN,
Superintendent and Secretary.

S. Passmore May, Esq.

Toronto, October 28th, 1886.

Hon. G. W. Ross,
Education Department.

Dear Sir,—We have in preparation a Kindergarten and Primary Drawing Book which we would be glad to submit at an early date.

Yours truly,

SELBY & CO.

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35 Scott Street,
Toronto, February 7th, 1887.

Hon. G. W. Ross,
Minister of Education.

Dear Sir,—As I purpose calling on you either on Wednesday or Thursday of this week, with Mr. Elias Rogers, in connection with the authorization of the Primary Drawing Course, I would like to ask your attention to one or two points which have generally been overlooked or forgotten when in conversation with you on this subject.

The Course is founded on the first elements of drawing, the importance of which was demonstrated by Pestalozzi, and found out and applied by Frœbel. Formerly drawing was only a preparation for art, commenced too late, its elementary principles not properly instilled, its progress devoid of method, and without regard to the fact that not all are able to excel in the art and but few have a natural talent for it. It produced only the show of fruit.

The drawing books of the present time have still clinging to them the old methods and principles. The compilers are usually artists, who, if they knew Pestalozzi and Frœbel at all, only knew them by name, so that the ideas of these two great masters of pedagogy have never been carried out, or at least have only been turned to account in the kindergarten. It would be almost impossible to overrate the merit of Frœbel in having continually held up drawing as one of the most fruitful means of instruction; in having sought incessantly after a method which might be employed even for very young children, and in having found, by his research, the most important principles to be observed.

The child betakes itself voluntarily and instinctively to drawing, and no one will deny the importance of bringing this natural inclination to account as a means of instruction.

The essential points in this Course will consist in a careful adaptation of what is taught to the powers of the learners, in drawing from dictation, or memory, in an intelligent choice of subject, in a suitable encouragement of original invention or design, and in the exaction of perfect neatness in execution, so that even the simplest drawing may produce a pleasing effect.

Besides using the checkered drawing paper I purpose using dotted drawing paper, which will facilitate the freehand drawing.

I hope this will receive your usual kind consideration, and that there will be no difficulty in the way of the Primary Drawing Course being made compulsory.

Very truly yours,

WILLIAM SELBY.

Toronto, February 18th, 1887.

Hon. G. W. Ross,
Minister of Education, City.

Dear Sir,—I mail you copy of "Books and Notions," in which you will find a letter from a bookseller complaining of the change in size and increase in price (without notice) of Nos. 1 and 2 of the Canadian Drawing Course. The blame is laid at your door by the publishers.

It would be well if, on all authorized books, the Old Country custom could be introduced, viz.: That when a new edition of any book, with changes or additions, the same shall be duly advertised, and on the publishing of said new edition all the old edition remaining unsold shall be returnable to the publishers at the price paid for same, to be exchanged for copies of the new edition.

Yours truly,

WILLIAM SELBY.

Education Department,
Toronto, January 19th, 1888.

Gentlemen,—The alteration of and addition to Part I, Kindergarten Drawing Course, embracing the placing of "the hints to teachers" on inside of front cover, the addition of four pages to the book, the ruling of the checkered copy pages in blue, the change in order of lessons and addition of new ones, the remarks on the subject of

drawing on back cover, and other improvements made as per sample copy submitted and dated December 21st, 1887, are hereby formally approved in terms of section 15 of the indenture, in regard to said Drawing Course, dated 4th July, 1887.

Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. Selby & Co.,
Publishers, etc., Toronto.

Education Department,
Toronto, February 14th, 1888.

Gentlemen,—In connection with my letter of 19th ult., it will be necessary to so print the drawing copies in Part I, Kindergarten Drawing Course, that when the book is open the copy will in each case be on the left hand and the blank paper for reproducing the lesson be at the right hand of the scholar.

Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. Selby & Co.,
Publishers, etc., Toronto.

Toronto, February 15th, 1888.

Alex. Marling, Esq., M.A.,
Secretary Education Department, City.

Dear Sir,—In reply to yours of the 14th inst., No. 705, Gr. 818, *anent.* Part I, Kindergarten Drawing Course, we will print the next edition as therein requested, viz.: Blanks on the right and copies on the left hand side.

Yours very truly,

SELBY & CO.

Office of the Canada Publishing Co., 26 Front Street.
Toronto, January 13th 1887.

Sir,—As we have learned that you are arranging to give the right to publish our Drawing Books to other firms, we take the liberty of pointing out to you the unfairness of so doing until such time as all publishers of authorized Public School books are placed on the same footing.

1. We understood, when we complied with your wishes and surrendered the copyright of our authorized books that all other holders of such copyrights would be required to do the same.

2. We find that the only copyrights, with one exception, yet surrendered to the Department are those transferred by ourselves.

3. Over one-half the most salable and remunerative books on the authorized Public School list has been owned and exclusively published under copyright protection and without Departmental restraint by one firm for a period ranging from *eight to eleven* years. The said firm still holds these copyrights and refuse to surrender them, and ourselves and others are debarred from publishing their books.

We submit, therefore, that it would be a very unfair discrimination against a firm that has complied with your regulations and transferred the copyrights of its authorized Public School books to you, to grant others the advantage of publishing them until such

time as the contract of the whole list of Public School authorized text-books is secured by the Education Department, and all holders of such copyrights are thereby placed on the same footing as ourselves.

We have the honour to be, sir,
Your obedient servants,

FOR THE CANADA PUBLISHING CO., (LIMITED.)
S. G. B.

Hon. G. W. Ross,
Minister of Education.
City.

GODERICH, January 25th, 1887.

Hon. G. W. Ross,
Minister of Education,

DEAR SIR,—I have before me a circular handed me by one of our booksellers issued to the trade by the *Grip* Printing and Publishing Co., announcing the issue of a new High School Drawing Book, and stating that "under the direction of the Minister the examinations in drawing in the Department of Practical Geometry will be based on this new work as a text-book," and that "the books will be required by High School pupils at once for work in the present session."

I write to ask if these statements are correct and authorized by you and if the examination referred to are the second and third class non-professional examinations next July.

My reason for asking is that after the complaints made in the past about springing changes on the schools, I am reluctant to believe that you would treat masters with so little consideration as now, after their classes have supplied themselves and got fairly to work, to prescribe a new book for immediate and compulsory use, and to leave them to learn the fact, or at all events to get their first intimation of it, from booksellers coming to them for instructions.

Hoping that you will be kind enough to answer as soon as possible.

I remain,
Yours sincerely,

H. J. STRANG,
H. M. H. S.

EDUCATION DEPARTMENT,
TORONTO, January 29th, 1887.

MY DEAR SIR,—The statements in italics contained in the circular enclosed are entirely unauthorized. The new book is so far a private venture of the publishers. No teacher is obliged to introduce it. The examination for drawing and geometry will be the same as last year, and it will be for the students to say whether a book such as that just issued will be of any service to them or not.

Yours truly,

G. W. ROSS.

H. J. STRANG, Esq.,
Goderich.

GODERICH, February 1st, 1887.

The Hon. G. W. Ross.

DEAR SIR,—I write to acknowledge your letter of the 27th ultimo, and to thank you for the satisfactory assurances it contains with regard to the statements and the book referred to.

If in my previous letter I expressed myself with unnecessary warmth, I trust you will kindly attribute the fact not to any want of respect for you or to any doubts of your desire to treat us fairly, but rather to my strong desire to uphold the dignity of the profession and my determination to resent any attempt at dictation on the part of publishers.

Yours sincerely,

H. J. STRANG.

TORONTO, May, 3rd, 1887.

Hon. G. W. Ross, B.A.,
Minister of Education,
City.

DEAR SIR,—We mailed you the other day a specimen copy of our new manual of *Perspective* and *Geometrical Drawing* by T. H. McGuirl, B.A., of Collingwood Collegiate Institute, for examination.

We would now request that you have it authorized for use in schools in the Province of Ontario. It is highly commended by teachers as being exactly suited to the programme prescribed by the Department, for candidates for second and third class certificates.

Hoping your favorable reply.

I am, yours truly,

WILLIAM BRIGGS.

TORONTO, May 5th, 1887.

MY DEAR SIR,—I have your copy of McGuirl's text-book on Perspective and Geometrical Drawing. The price at which it is sold is so high that I could not think of authorizing it, unless reduced very considerably. Besides, it does not altogether suit my notions of what a text-book in that subject should be.

Yours truly,

G. W. ROSS.

The Rev. W. BRIGGS,
Toronto.

TORONTO, May 14th, 1887.

Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—Yours of the 5th, *re* "McGuirl's text-book on Drawing" is to hand. The price was fixed at 75 cents, figuring on a small edition, so as to include the cost of engraving which was very heavy.

If the book is authorized for use in the schools we would be willing to sell it at a lower figure. A number of drawing masters and others *have spoken very highly of the work*. We have sold about half the edition already, although the book has only been out a little over a month.

I am, yours truly,

WILLIAM BRIGGS.
per A. G. W.

TORONTO, January 4th, 1888.

The Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—Mr Gage's solicitor has been in to see me regarding arbitration as to the drawing books ; also as to the arithmetic, grammar and geography. He has asked me to get for him a copy of the agreement respecting the last three books. I promised to ask you to send me copies for him.

I have received to-day formal notice of abandonment, and also waiver from the solicitor of the Canada Publishing Company as to my claim for costs on the funds in your hands. We suppose it is the intention of Mr. Gage to apply for permission to publish the arithmetic, grammar and geography after he sees the agreement. This he understands cannot be done until September, 1888, but he wishes if possible to arbitrate meanwhile so that this matter may be ready in September, 1888, for him to go on publishing.

Yours, etc.,
JOHN A. PATERSON.

P. S. Since writing above, I have received enclosed letter from Mr. Stephenson. I send it to you to file in your Department.

TORONTO, January 9th, 1888.

MY DEAR SIRS,—Herewith find copies of agreement asked for.

Yours truly,
GEO. W. ROSS.

W. J. GAGE & Co.,
Publishers, etc.,
Toronto.

TORONTO, January 16th, 1888.

Hon. G. W. Ross, M.P.P.,
Minister of Education, City.

DEAR SIR,—Please send me a copy of the agreement as regards the following books :—Public School Grammar, Public School Arithmetic, Public School History, Public School Geography, High School Grammar, High School Geography, McLellan's Algebra. I will need them for drawing up submissions as to arbitration with Mr. Gage.

I have the honour to be,
Yours truly,
JOHN A. PATERSON.

TORONTO, January 17th, 1888.

HENRY WILKINSON, Esq.,
Education Department, City.

DEAR SIR,—I received a telephone message to-day, as to whether I received the copies of the agreements. I suppose it came from you.

I have to say that I have not yet got any copies of agreement. I wrote again for them yesterday.

Would you please see the Minister and get the copies, and send, and oblige

Yours truly,
JOHN A. PATERSON.

EDUCATION DEPARTMENT,
TORONTO, January 20th, 1888.

DEAR SIR,—I send herewith copies of indentures relating to Public School History, High School Grammar, High School Geography, and McLellan's Algebra, as requested.

Copies of indentures *re* Public School Grammar, Arithmetic, and Geography, were sent direct to Mr. Gage a few days ago.

Your obedient servant,

ALEX. MARLING,
Secretary.

JOHN A. PATERSON, Esq.,
Barrister, etc.,
Kerr, Macdonald, Davidson & Paterson,
Toronto.

TORONTO, January 25th, 1888.

The Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—I have seen Gage and told him your conclusion, which was to let the arbitration proceed on the basis of the royalty and the lump sum for expenses and authorship. He is not satisfisd. He wants the arbitration deferred as to both. I mean, first, the lump sum in commutation of royalty and expenses; and, second, the lump sum for expenses, independently of the royalty, and then you can exercise your option as to which. That is the way he wants us to fix it, and talks of letting the whole thing drop unless that can be done. Of course I do not know how far he means this latter. What I am afraid of is that if he backs out no one else will come forward, and I suppose that it is in the public interest that the arbitration should go on; that the monopoly cry should get its quietus. He will explain to you fully in the morning when you get this letter, his views.

We tried this afternoon to get an appointment with you, but found that you had left the Reform Club, and seeing you at your house to-night was so uncertain that we gave it up.

I trust that the matter can be arranged between you and him in the morniug. The reason I write now is that I cannot see you to-morrow, as I am called out of town on business at Markham.

I have, etc.,

JNO. A. PATERSON.

TORONTO, January 26th, 1888.

MY DEAR SIR,—Mr. Gage called upon me to-day and is very anxious that the arbitrators should be allowed to consider both conditions in section 16 of the agreement, namely (1) as to a lump sum in commutation of royalty and expenses, and (2) as to a lump sum independent of the royalty.

As I am anxious that those desiring to publish the authorized text-books should have every privilege possible under the agreement, I am willing that you should allow him to proceed as he desires, and draw the bond accordingly.

Yours truly,

GEO. W. ROSS.

JOHN A. PATERSON, Esq.,
Barrister, etc.,
Toronto.

TORONTO, February 17th, 1888.

Hon. G. W. Ross, M.P.P.,
City.

DEAR SIR,—*Re* Public School History, Grammar, Arithmetic, Geography, Drawing Books and W. J. Gage and Co.

We enclose you agreements in duplicate and appointment of arbitrators in each of these cases for your consideration. Mr. Gage is anxious to go on.

Yours, etc.,

KERR, MACDONALD, DAVIDSON & PATERSON.

TORONTO, February 21st, 1888.

Hon. G. W. Ross, LL.D.,
Minister of Education,
Toronto.

DEAR SIR,—There is an increasing demand for slates scored in squares and in lines. The former used in the kindergarten and in connection with the kindergarten primary drawing course, and the latter used in the junior divisions of the public schools.

The very high price (25c. and 30c. for a 6 by 9 and 7 by 11) for the chequered slate has debarred it from being more generally used outside of the kindergarten, and the same cause has acted as a deterrent in the general adoption of the slate scored in lines on one side, or only on part of one side, the teachers, in many cases, scoring them as best they could.

We purpose endeavouring to supply this want, and have in course of erection a machine that will rule accurately either in squares or lines any size or width.

We will be pleased to have your endorsation, with any suggestions, remarks, or instructions. The retail price of said scored slates will only be a small advance on the present price of the common slates.

Yours very truly,

SELBY & CO.

EDUCATION DEPARTMENT,
TORONTO, February 24th, 1888.

GENTLEMEN,—The Minister is not prepared to express any opinion as to your proposal of 21st in reference to slates.

Your obedient servant,

ALEXANDER MARLING,
Secretary.

Messrs. SELBY & Co.,
38 Scott Street, City.

TEMPERANCE.

Toronto, 13th October, 1886.

Dear Madam,—A committee of ladies waited upon me some months ago to ascertain what was done by my Department respecting temperance instruction in the Public Schools. I supplied them with a copy of a new book which I had then just authorized for the use of teachers in training in our Model and Normal Schools. I also called their attention to the Regulations in which teachers are instructed to address their pupils at least once a week on this subject. This is all that I thought was practicable. To ask pupils to read from a text-book would not secure the object in view. If, however, teachers can be thoroughly impressed with the importance of temperance education and endeavour in easy and familiar language to impress their views upon their pupils, more would be gained than by the study of a text-book, very often beyond the comprehension of the young child. I hope you will approve of what has been done. I send herewith book on Hygiene and a marked copy of the School Regulations.

Yours truly,

G. W. ROSS.

Mrs. Addie Chisholm,
127 Bank Street,
Ottawa.

Picton, Ont., February 12th, 1887.

Hon. Geo. W. Ross,
Minister of Education,
Toronto.

My Dear Sir,—I see by the Speech from the Throne that it is your intention to grant the petition of temperance men and women by providing for scientific temperance instruction in the schools.

Now, as you are aware, I have a right to consideration in the preparation of a text-book, or text-books for that purpose, having prepared my book on the promise of the late Minister, Hon. A. Crooks, and having thus far been disappointed in realizing what I had a right to expect.

I would be glad to know your mind in the matter and would be ready at any time to simplify my book or adapt it, in any way you may think best, to school work.

Trusting you will do me the justice to fairly consider this matter, I offer my services to prepare a cheap book covering the subject, with little delay, and have no objection to the copyright being vested in the Department.

If you would like to look over my former book again, I will be glad to send you another copy.

I believe it covers the ground better than any other book.

Sincerely yours,

G. D. PLATT.

Toronto, 14th February, 1887.

My Dear Sir,—I am examining everything in print on the subject of scientific temperance, and will give your book due consideration before I decide upon the authorization of anything special.

Yours truly,

GEO. W. ROSS.

G. D. Platt, Esq.,
Inspector Public Schools,
Picton.

OWEN SOUND, March 24th, 1887.

DEAR MR. ROSS,—I see you are being deluged with petitions for the introduction of temperance instruction into our Public Schools. At the risk of being considered officious I venture to make a suggestion.

Some time ago I suggested to the W. C. T. U. of Owen Sound to petition the Board of Education to allow temperance instruction to be given orally by the teachers in the Public School. There is always an hour or so on Friday afternoon given up to school recreation—a sort of go-as-you-please hour between teachers and pupils.

I suggested that half an hour on Friday afternoon might very profitably be given to an oral temperance lesson. The ladies make a present to each teacher of Mrs. Hunt's Temperance Physiology, and the Board allowed the teachers to give the half hour to an oral lesson. The result has been good, I believe—the pupils are not unnecessarily burdened with another study, nor the parents frightened with the prospect of another school book. One good lesson, per week, will do a great deal in instilling a sound sentiment into the minds of the pupils, and the teacher's influence throughout the week will bear definitely in the same direction. If it were made a subject for Model Schools it would make its introduction more simple. Teachers would thus be directed how to give an efficient lesson on the subject.

When the presentation copy of Mrs. Hunt's book was given to our teachers the one authorized by the Department was not out. I am very much pleased to think music is going to get a place on the programme. I trust you will have the loyal support of both sides of the House in your schemes for elevating still higher our educational system. Excuse me for intruding myself, and believe me,

Yours very sincerely,

J. SOMERVILLE.

The Honourable G. W. Ross,
Toronto.

TORONTO, 28th March, 1887.

MY DEAR MR. SOMERVILLE,—I am very glad to learn that you are so well pleased with my proposition to introduce the study of temperance more definitely into our public schools. When I made a regulation two years ago for "oral" lessons by a teacher, on Friday afternoons. I thought I had done all that public opinion at that time required. It would seem, however, that something more is necessary to satisfy the ardor of our lady friends. I agree with them that, so far as is consistent with the public interest, nothing should be left undone that the Department has a right to do, to impress the importance of temperance and total abstinence on the young people of this country. I hope the new book, which will be published during the summer holidays, will meet with your approval.

Yours truly,

GEORGE W. ROSS.

The Rev. J. SOMERVILLE, Esq.,
Owen Sound.

TORONTO, June 17th, 1887.

MY DEAR MR. HOUGH,—Herewith find Temperance Book marked. Would like the book set in long primer solid or bourgeois leaded, with brevier solid at end of lessons for examination questions, and for appendix.

You should prepare a short preface in which you may state that the book is published and authorized by request, for the promotion of Temperance in our Public Schools. Make it short.

Yours truly,

GEO. W. ROSS.

HENRY HOUGH, Esq,
Toronto.

TORONTO, July 19th, 1887.

Hon. G. W. ROSS, M.P.P.,
Minister of Education.

SIR,—We understand that there is in preparation a temperance text-book for use in Public Schools, and we would be obliged if you would kindly give us information in regard to application for right to publish the same. Our Company could do the work, and we think it would be eminently proper for the Canadian Temperance Publication House to issue this book.

We have the honour to be, Sir,
Your obedient servants,

THE CITIZEN PUBLISHING CO.
F. S. SPENCE,
Managing Director

TORONTO, 20th July, 1887.

MY DEAR SIR,—The temperance text-book which I wanted for the Public Schools was copyrighted by another firm. The work is now going through the press and will, I trust, be found satisfactory.

Yours truly,
GEO. W. ROSS.

F. S. SPENCE, Esq.,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, September 24th, 1887.

GENTLEMEN,—The specimen copy of "Public School Temperance" has been examined by the Assistant Queen's Printer, who reports as follows:—

"I find that in most respects the style of manufacture agrees with the conditions laid down in the indenture, but in one important matter it does not. The end papers are not pasted in separately from the first and last sections, but in both places form parts of these sections, thereby lessening very much both the durability and appearance of the book, being contrary to the usage in the manufacture of all well made books. The last page of cover is not embossed as specifications call for."

The Minister of Education requires therefore that the balance of the books unbound shall be embossed, and that the next edition shall show better work done. Conditional on this being done, permission is given for the sale of present edition to the Public Schools.

Your obedient servant,
ALEX. MARLING,
Secretary.

THE GRIP PRINTING CO.,
Toronto.

OFFICE OF THE EDUCATIONAL JOURNAL,
GRIP PRINTING AND PUBLISHING CO. PUBLISHERS.
TORONTO, ONT., 17th October, 1887.

DEAR MR. ROSS,—I have just been informed that a deputation of W. C. T. U. members is to wait upon you to-day. This I persume was decided upon on Saturday, as I saw the executive adjourned till that day at Napanee; I saw from a letter which I wrote in reply to questions about the introduction of the book.

I think you should be in possession of the fact which I wished to communicate when I might get an interview, that I have visited quite a number of places to draw the atten-

tion of Trustees to the subject. It is everywhere understood that the Boards may do just as they please about the matter, and I have received no encouragement of any consequence. Toronto Board has gone the length, by decision of Committee of Management, to give one book to each Principal, say twenty-five books. Guelph Board took no action at its meeting; nor did Stratford; though I see by to-day's *Mail* that the Teachers' Convention for that County passed a strong resolution approving of the study, and thanking and complimenting you for providing for it. In Hamilton the Board were listless; though Mr. Burton placed a motion on the paper, which will not carry, for the introduction of the book. And so everywhere; if the Boards are temperance as to their majorities, and at the same time reform, there will not likely be much trouble, though the time taken will be indefinite. But where the other element of either kind prevails they will only feel too much pleasure in kicking it out for your sake and that of the temperance cause.

In fact the Board themselves are surprised, after the legislation, to find the book optional, for they expected the other thing, and instead of having some feature of uniformity about it, the subject will be in some schools and not in others, every rejection being accompanied by a cackle in the Tory papers. The question is, what is best to be done—whether to arrange now for what I believe you personally wish in the matter, or to have an interminable campaign with all its attendant and unseemly bickering, Tory against Reform, whiskey against temperance, and women against government. I am sure I would be sorry to see such an exhibition, and I believe the matter can be more easily arranged now or at the forthcoming meeting of the Trustees' Association in November than at any future time. Meanwhile the books lie in our stock rooms.

There are no sales since the first one to Copp, Clark & Co., and they have the greater number on their shelves, consequently, instead of a favour, my Department has met a serious loss.

Yours faithfully,

H. HOUGH.

Toronto, October 27th, 1887.

My Dear Mr. Ross,—I have been waiting for your return from Quebec, where I hope the Conference proceedings have been satisfactory to you all. I wanted to ask a short consultation on the matter of P. S. Temperance, the difficulties surrounding which are increasing rather than abating. It seems I was misinformed as to deputation to see you the day before you left—the party informing me having, I think, got it mixed with an intended delegation from this city, to be followed, I now understand, by one from the provincial union.

I find that no representations to School Boards have any weight in the presence of the fact that the subject is optional. They are, indeed, somewhat surprised to find it so; as, after the passing of the Act, they expected it to be in the same rank as other necessary studies; the liquor party, if so they may be referred to, expected the same thing; the ladies state that their petition to Parliament asked that the teaching of the subject be required, and that such was their understanding; while the Act plainly gives the Department power in the premises. It certainly seems to me, therefore, that if the thing had been understood to be compulsory from the outset, nobody would have been surprised or disappointed, and the present difficulties and unseemly discussions would have been avoided.

There are two features of this business, neither of which is a satisfactory one. First, the object of the petition and of the legislation is not secured, and the boys in the schools are not being, and, under the present position of the matter, will not be, taught the truths which are believed to be calculated to advance their welfare. Personally, I am sure the failure to secure such instruction would be a matter of much regret to yourself. Secondly, the publishers, and myself with them, are most seriously damaged by large outlays to produce a book which we are unable to sell. The efforts to induce trustee boards here, so far, had a result which is next to nothing. These efforts, moreover, are quite expensive, because, in the first place, they involve travel and loss of time; and, in

the second, we find we have to give a copy of the book to every trustee whose option and whose vote is asked in its favour. These expenses are destined to eat up the profits, even where sales are effected. We printed a large edition, never dreaming of such a state of things as this. We made a fair sale to one house, only to be applied to for a rebate, when you ordered the increase of the trade discount from 20 to 25 per cent. In view of all this, and irrespective of any moral feature of the book and its study, I am sure you would be surprised if I did not ask you to put this business, for us, on a more satisfactory commercial footing. You can do this by the change of one word in the regulation ; that word Parliament has given you the full power to change ; and that word everybody appears to have expected you to use in the first place.

I think I spoke to you about the unseemly contentions which are being, and will continue to be, excited on this subject. These discussions will be carried on from different standpoints—some enemies of the Department attacking it for authorizing the book, an act which the discussion will call to mind, and others attacking it for leaving it optional when authorized.

The Boards will be variously divided, as their political or temperance complexion may lead them to act ; while every case of rejection of the book will be followed by a howl of triumph from its foes and yours. Not only so, but the ladies will undoubtedly continue their agitation, not being able to rest till their petition is granted.

They must eventually either secure their object or fail. If they secure it, the out-looking public, who may not fully understand the merits of the contention, will regard their success as victory over you. If they fail, the book will fail of introduction to the schools—a thing which, as I said before, I believe none will more sincerely regret than yourself. Then why should this dilemma be invited? And why should all this unseemly discussion be allowed over *such a book as this?* I think the contentions which have already taken place may be quoted as a most suggestive "figure of things to come."

My dear Mr. Ross, don't you think my suggestion is a sound one, that if this thing is to be done, as we all believe it is, the sooner it is done the easier and the better? It seems to me that every local row will only make the final decision more difficult, —certainly I do not think the matter can remain in its present position—either for your sake or ours. I do not presume to make suggestions as to the best course to pursue—your own judgment will lead you in that. It is mine, however, under the grave circumstances in which I find myself, as the publisher of an authorized unsalable book, to ask that you will take the necessary measures to make the regulation effective. I think the approaching meeting of the Trustees' Association might be utilized for the removal of the difficulty. If you were to say, "Gentlemen, I authorized this new Temperance Text-Book under the provisions of the Act, expecting that Boards of Trustees would see the desirability of complying with the request that it be introduced into the public schools ; but as there seems to be hesitation and failure to carry out the prayer of the petition adopted by Parliament, I must amend the regulations in accordance with the intention of the Department in placing the subject in the programme."

I think it would avoid the dilemma, head off the controversy, and secure the object which has appeared to be in hand since the law was amended.

I should feel obliged by your notifying me as to a time at which it would be convenient to see me on this matter.

As ever, faithfully yours,

H. HOUGH.

FERGUS, October 17th, 1887.

Hon. GEO. W. ROSS,
Minister of Education.

SIR,—I take the liberty of addressing you briefly with reference to the enclosed amendment, not as Secretary of the Board of Education, but as a trustee and elector of this municipality, and one who is interested in the moral, physical and intellectual welfare of the young and rising generation.

The first thing I would call your attention to is the fact that out of a board numbering twelve, this amendment was carried by only one of a majority, there being one favourable to the motion, also unavoidably absent through sickness.

I would next call your attention to the plea of needless expense to the parents, in having to purchase the text-book at a cost of 25 cents.

To remedy this the opponents of the text-book recommend the inserting of a few chapters on the subject, in the authorized school readers. I wonder which *would cost the most*. Some of the members of our Board objected to the text-book because it taught total abstinence, and not temperance, yet the same member supported the amendment which points out that total abstinence is the safe course. Altogether the opponents of the text-book seem to want to switch off the subject, regardless of consequences. Personally I am sorry that the Department have not made it compulsory to be taught as any other branch, and I hope they will yet see their way to do so in the near future. And I am sure the electors will sustain them in their action.

I have the honour to be, Sir,
Your obedient servant,

H. TINDALE.

Copy of an amendment to the following motion, which was carried at a meeting of the Fergus Board of Education held on the 10th instant.

Moved and seconded, "That the text-book on the subject of temperance, authorized by the Educational Department, be introduced into our public school, and that temperance be taught therefrom, on, and after the 17th instant."

Moved in amendment and seconded, "That in the opinion of this Board there are now quite a sufficient number, if not too many text-books in use in the public schools of Ontario, therefore it would be better if instead of introducing another at needless expense to parents, a few chapters were inserted in the authorized school readers, showing the danger that persons who use intoxicating liquors at all as a beverage, may acquire an appetite for them, pointing out that total abstinence is the safe course, and setting forth the terrible consequences of excess. Also that a copy of this resolution be forwarded by the Secretary of the Board to the Hon. Geo. W. Ross, Minister of Education.

H. TINDALE,
Secretary, Fergus Board of Education.

Fergus, October 17th, 1887.

TORONTO, 1st November, 1887.

MY DEAR SIR,—I beg to acknowledge receipt of a resolution passed by the Fergus Board of Education respecting the Temperance text-book.

It must be remembered that the teaching of temperance and hygiene is compulsory, no matter what action the teacher may take in regard to the introduction of the text-book itself.

Yours truly,

GEO. W. ROSS.

H. TINDALE, Esq.,
Secy. Board of Education,
Fergus.

TORONTO, 7th November, 1887.

MY DEAR SIR,—I cannot see how the W. C. T. U., or any other body, corporate or sole, could misunderstand the new regulations respecting the study of Temperance and

Hygiene. The subject occupies precisely the same position on the programme as the other subjects taught in our public schools, and the terms used by which the study of one is made compulsory are precisely the same as are used with reference to Temperance and Hygiene. It does not follow, however, that because the study of the subject is compulsory, the use of a text-book is compulsory. Where a text-book is prescribed all we require is, that that text-book and no other should be used.

I am writing somewhat more fully to the Union in regard to the matter, and, no doubt, my letter will come under your notice.

Yours truly,

GEO. W. ROSS.

H. HOUGH, Esq.,
Toronto.

BRANTFORD, October 7, 1887.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—Having received a copy of the new Temperance text-book from the publishers, I feel I bespeak the sentiments of the W. C. T. U. universally in congratulating your department for the promptitude displayed in the issuing and the introduction of the same into our schools.

Will you kindly give me information *at once* respecting the following points, viz., 1. Is this study compulsory, or is it at the option of trustees? 2. If introduced, is the text-book placed in the hands of pupils? 3. If introduced, does the regulation *require* regular examinations as on other subjects?

If convenient I should be pleased to have a complete copy of the school regulations regarding this study.

Owing to the severe illness and recent death of my father I have been prevented communicating sooner, and being desirous of having this information for the annual convention of the Provincial W. C. T. U. which convenes early next week, a prompt reply will greatly oblige.

Very respectfully yours,

ANNIE O. RUTHERFORD.

TORONTO, 9th November, 1887.

DEAR MADAM,—I very much regret that owing to my prolonged absence from the city, a reply to your enquiries respecting temperance teaching in our public schools has been so long delayed.

Your letter refers to three different branches of the subject: (1) Is the study of Temperance and Hygiene compulsory? (2) Is the use of the authorized text-book compulsory? (3) Has provision been made for the examination of pupils in these subjects?

Your first question I already answered in my telegram to the W. C. T. U. by quoting the new regulations in the words following:—

"The nature and effects of alcohol upon the system and the importance of temperance "and a strict observance of the laws of health, as set forth in the authorized text-book, "should form part of the regular instruction of the school from the second form upwards, "and should be taught, either by the use of text-books or otherwise, as thoroughly as any "other subject."

Doubts have been cast upon the meaning of this regulation, because the mandatory word used is "should" and not "shall." A moment's consideration of the regulation as a whole should be sufficient to dispel such doubts, as the same mandatory word is used with reference to the study of reading, writing, grammar, geography etc., and it is well known that the study of these subjects is compulsory.

Furthermore, it is worthy of notice that the regulation is framed to prevent a mere nominal compliance with the law, as it provides a well known standard by which the teacher's work is to be determined.

With respect to your second enquiry, my answer is *no*; and if a similar enquiry were made respecting any other subject on the programme capable of being taught without a text-book, a similar answer would be given. Do not mistake the position of the question. While it is the bounden duty of every teacher to instruct his pupils in Temperance and Hygiene as thoroughly as in any other subject, he is nevertheless at liberty to do this orally or otherwise, so long as the required standard of excellence is attained.

The Department never accepts the mere use of a text-book as a proof of efficient teaching; and, on the other hand, its non-use is no ground for complaint where a proper degree of efficiency is found to prevail. In Temperance and Hygiene the duty of the teacher is not so much to fasten certain facts in the memory, as is largely the case in regard to many other subjects, but to explain and emphasize the great lessons which science and experience suggest, in order that his pupils may act upon them in after life. If the school authorities think this cannot be done without a text-book, then let it be introduced by all means.

Your third enquiry requires but a word. Examinations in Temperance and Hygiene are held at the close of each session in the country Model Schools, in the Provincial Normal Schools and in the Training Institutes. Every teacher authorized to teach a public or high school has now to satisfy the Department with respect to his knowledge of these subjects in precisely the same way as is required in other subjects. I might add that no provision has been made for examinations in public schools, beyond what the Inspector may deem necessary in his semi-annual visits.

Yours truly,

GEO. W. ROSS.

Mrs. Annie Rutherford,
Brantford.

Toronto, 10th November, 1887.

My Dear Madam,—I enclose herewith a copy of a letter addressed to Mrs. Annie Rutherford, which I hope will be a satisfactory answer to all the enquiries you make. I made one or two alterations, in pencil, in the proposed circular, in order that the legal position of the temperance text-book might be accurately stated; but on this point more fully, see enclosure.

Yours truly,

GEO. W. ROSS.

Mrs. Addie Chisholm,
127 Bank Street,
Ottawa.

Hamilton, November 16th, 1887.

My Dear Sir,—As the question of introducing a book on temperance into the public schools comes up at the next meeting of the Board of Education in this city and knowing that you take a great interest in this cause, I take the liberty of asking you to what extent "Richardson's Temperance in Schools" as authorized by the Education Department, is used in the schools of the United States or other countries, and if you could give me the names of some places where it is used, in order that I may be in a better position to advocate the introduction of it into our schools here.

Hoping you will be in a position to give me the required information and that it will be the means of having the book brought into use here.

I am, dear Sir,
Your obedient servant,

A. McPHERSON,
P. S. Trustee.

TORONTO, 21st November, 1887.

MY DEAR SIR,—I understand that the text-book authorized by the Education Department, namely Richardson's "Public School Temperance," is authorized in the three Maritime Provinces and in British Columbia. It is used in the Province of Quebec, but it is not the only authorized book in the Province on that subject. The general sanction it received from the Educational authorities of the other Provinces of the Dominion, was one of the reasons which led my Department to sanction its use in the Province of Ontario.

Yours truly,

GEO. W. ROSS.

A. McPHERSON, Esq.,
51 James St., W.
Hamilton.

TORONTO, 13th December, 1887.

The Hon. G. W. Ross, M. P. P.,
Minister of Education, Toronto.

MY DEAR MR. ROSS,—Will you let me ask a favor, which I believe I can show you to be reasonable, and which I am glad to find it is not too late to grant. The proposed regulation concerning the study of the effects of alcohol upon the system, directs that the subject be taught "*either by the use of text-books* OR OTHERWISE," as thoroughly as any other on the programme.

The clause which I have underlined contains a suggestion that the book may be dispensed with in teaching, which is not found in the directions as to grammar, arithmetic, or other such subjects; and, consequently, it appears to me, discriminates against the text-book on this subject to its disadvantage as compared with others. The sale of the book is thus discouraged, and our already critical interest in it is injured. You made the fact very distinct in the recent interview that, as a matter of law, the use of a text-book is not compulsory *in any subject.* This general principle covers the ground for all studies without the extra suggestion against the book in this one, which the clause appears to make. The suggestion, indeed, seems to detract from the force of the authorization, and the Hamilton Board regards it in that light.

I respectfully ask you to leave out this clause, in the regulation not yet printed. I do not ask that you order the subject to be taught "by the use of text-book," but that you allow it to take its place as to the necessity for such text-book, on the same ground as others. For I am sure that you, especially, have no object in even appearing to discriminate against this book, which, if the clause be left out, the inspector and the teacher will treat as they do any other, giving it to the pupils or withholding it, as they consider necessary. The cheapness of the book, and its general use in the different forms (one serving a whole family) disposes of any necessity for curtailing its use; while the absence of requirement of a departmental examination sufficiently handicaps its sale without the suggestion thrown out by the clause. The same general arguments in favor of using a text-book apply to this as to any other; for certainly the subject will never be so thoroughly

taught, or the teacher's time and effort so effectually economized and concentrated, without the text-book as with it. But I don't ask the application of an argument in favor of its use,—only the removal of an apparent suggestion against it.

Will you kindly grant this before the confirming of the revise makes it too late, and once more oblige,

Your obedient servant and friend,

H. HOUGH.

TORONTO, 14th December, 1887.

MY DEAR SIR,—The word "otherwise" used in the regulations respecting Temperance and Hygiene does not appear to me to discriminate against the use of text-books in regard to temperance any more than in regard to any other subject. The clear inference from all the regulations and from the law in regard to the use of text-books is that where a text-book is not used, the subject must be taught orally. The word "otherwise" if rendered "orally" would, perhaps, be clearer, but that was the intention of the Regulation.

However, it is too late now to reconsider the matter, as the regulations were yesterday approved by Council and must stand in their present form.

Yours truly,

GEO. W. ROSS.

H. HOUGH, Esq.,
Toronto.

AGRICULTURE.

TORONTO, 17th March, 1887.

MY DEAR MR. MILLS,—Do you think, if you were asked, could you undertake to prepare such a work on "Agriculture" as would meet the necessities of our Public Schools, on the lines on which you propose drafting a syllabus of lectures for the Normal Schools?

Yours truly,

GEO. W. ROSS.

Professor JAMES MILLS,
Guelph.

ONTARIO AGRICULTURAL COLLEGE,
Guelph, March 24th, 1887.

MY DEAR SIR,—I have taken some time to think over the question asked in your letter of the 17th; and after all, I am at a loss what answer to give.

I think I have the knowledge of Botany, Chemistry and Canadian Agriculture, which is requisite for the preparation of an elementary work on agriculture; but there are several difficulties in the way.

(1) I have had no experience in book-making.

(2) I have on hand already about as much work as I can do.

(3) Much judicious culling, condensing and classifying would be necessary in the preparation of a suitable book. Hence, it would involve some time and a great deal of labor.

(4) Books prepared by direction of the Department seem to be looked on with suspicion and received in an unfriendly spirit by the teachers.

(5) It is not likely that you would feel justified in giving what might be considered adequate remuneration for the work.

Hence, in view of these facts, my answer as to whether I would, "if asked," undertake to prepare an elementary work on agriculture for the Department of Education, is, that it depends chiefly on two things: first, the time which you would allow for the preparation of the work; secondly, the remuneration which you could offer.

Yours, etc.,

JAS. MILLS.

Hon. G. W. Ross,
Minister of Education, Toronto.

TORONTO, 28 ST. MARY ST.,
April 6th, 1887.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—In reference to the publication of a Manual of Agriculture for Public Schools, which I spoke to you about on February 12th, I would say that having all arrangements for beginning a publishing business on July 1st completed, I will engage to prepare for you a book suitable to your purpose, upon the conditions which your Department lays down for publication.

I am already in treaty with the gentleman whom, above all others in Canada, I think most fit to write such a book, and I engage that, if encouraged by you, I will produce a book that in suitability, scientific value, literary character and typographical excellence, will bring no discredit to your Department.

I would suggest that the Education Department work in harmony with the Council of the Agricultural and Arts Association of Ontario, and to that end would respectfully suggest:

(1) That a course be laid down for the 3rd and 4th classes (or 4th classes alone) of rural schools, and that this course correspond with the course of reading required for the third class certificate of A. & A. Association. The pupils who take this course should receive credit therefor at the H. S. Entrance Examination, either by letting their marks be taken as an equivalent for drawing, or as a bonus to countervail deficiency in say history or some such other subject.

(2) That a course be established for 3rd and 2nd class certificates for teaching, marks obtained in it to be counted as a bonus. This course should correspond with that laid down for 2nd class certificates of the A. & A. Association.

I would further suggest then, that two books (or rather two parts of one book) be prepared, the one leading up to and supplementing the other and so arranged that they could be bound together as one book; that Part I. should be for Public School pupils and for Model School Examinations and that both Parts I. and II. should be used for third and second class teachers' examinations, and for instruction and examination in the Normal Schools.

From conversation with farmers, business men, and instructors all over the country, I am satisfied that the great deficiency in our school system (the only deficiency in fact) is a lack of training for the practical occupations of life, and I believe that the establish-

ment of a course of simple scientific training, such as was contemplated by your illustrious predecessor, the late Dr. Ryerson, even if optional, would be productive of immense benefit and would be an exceedingly popular step on the part of the Department.

I shall be glad to be favoured with an interview with you for further discussion of the subject.

I am, dear Sir,
Yours very respectfully,
JOHN E. BRYANT.

TORONTO, 28 ST. MARY ST.,
May 31st, 1887.

Hon. G. W. Ross,
Minister of Education.

SIR,—The following are the terms agreed to to-day in our interview, as I understand them :

On behalf of the firm of J. E. Bryant & Co., I am to produce and publish a book on Agriculture (title not yet determined upon) for use in the Public and High Schools of Ontario. The book is to consist of 224 pages, printed in leaded bourgeois type, 45 ems by 25 ems to the page, on paper 28 inches by 36 inches to the sheet. The paper is to be equivalent in quality and weight to No. 1 paper, 70 lbs. of 30 x 40 paper. The binding is to be equal in quality to that of the Public School History now published by Messrs. Copp, Clark & Co , and the general appearance of the proposed book is to equal that. The book is to be furnished with illustrations satisfactory to yourself and the author. The author is to be Mr. James Mills, M. A., Principal of the Agricultural College, Guelph. Mr. Mill's remuneration is to come from the publishers of the book, and may be either a lump sum, or a royalty attached to the copyright, as may be afterwards agreed upon between Mr. Mills and myself. He is to set about its preparation right away. The retail price of the book is to be 35c. Retail dealers are to be allowed a discount of 25 per cent. and wholesale dealers an additional discount of 10 per cent.

On your part, the book is to receive authorization for use in the Public and High Schools of Ontario, and the subject which the book covers is to be placed on the curriculum for fourth classes and third classes of Public Schools, and to be made an optional subject of examination for pupils desirous to enter High Schools, the marks obtained by candidates in this subject being added to the aggregate of marks otherwise obtained by them, and being reckoned in with this aggregate in determining their fitness for passing.

I have written to Mr. Mills acquainting him of your decision, and on receipt of the copy from him, the work of printing will be prosecuted with vigor,

I have the honor to be, Sir,
Your obedient servant,

JOHN E. BRYANT,
For J. E. BRYANT & Co.

P. S.—I have acquainted Mr. Mills with your desire regarding additional illustrations, (drawing levels, subsoil, etc.) and regarding fruit culture and forestry.

J. E. B.

MONTREAL, July 24th, 1887.

MY DEAR SIR,—When last I had the pleasure of calling upon you in Toronto, it was arranged that I should hear through Principal Mills, of Guelph, respecting the general lines upon which the required text-book on Agriculture should be prepared. Up to the 6th instant, on which date I left London, no information had reached me.

I am leaving for Qu'Appelle Station to-morrow night, and shall be staying there for two or three weeks, in case you wish to write to me hereon. Hoping you are quite well, believe me, my dear sir,

Yours, etc.,

HENRY TANNER.

The Hon. G. W. Ross.

TORONTO, 27th July, 1887.

MY DEAR SIR,—I understand that a publisher in this city has entered into an arrangement with Professor Mills for the preparation of a book on "Elementary Agriculture," to be used in our Public Schools. I am told also that another professor of the same school is engaged in a similar work. It is the intention to submit the works to my Department for examination in conjunction with other works of a similar character, in order that the one best suited for our methods of agriculture, etc., may be obtained. The text-book on which Mr. Mills is at work will be illustrated and sold at a very low figure. The publishers declare they will make it superior to anything else in the market.

Yours truly,

GEO. W. ROSS.

Prof. HENRY TANNER,
Qu'Appelle Station, N.W.T.

TORONTO, 18th November, 1887.

MY DEAR MR. MILLS,—I send you herewith what might serve as a sample page for the new work on Agriculture. I have consulted Mr. Bryant and he concurs in the method proposed. I hope you will decide positively to undertake the task, as I have so often pressed it upon your attention and am so anxious for you to enter upon it.

Yours truly,

GEO. W. ROSS.

Prof. JAMES MILLS,
Guelph.

TORONTO, 7th February, 1888.

MY DEAR MR. MILLS,—I understand from a note sent by you to Mr. Bryant that you are very much pressed with your own official duties, and have not got the relief we talked of at our interview at the Speaker's Chambers. Do you think a clerk from my office for two or three months would be of any advantage? I am announcing to the House that you are engaged in the preparation of a text-book on Agriculture, and would be very much disappointed if anything should prevent its completion at the time agreed upon. Let me know what your necessities are in regard to clerical work, and I shall endeavor to get you assistance.

Yours truly,

GEO. W. ROSS.

Prof. JAMES MILLS,
Guelph.

MUSIC.

NEW YORK, April 8th, 1887.

Hon. G. W. Ross,
Minister of Education, Toronto, Canada.

DEAR SIR,—I take pleasure in sending you Mason's First, Second and Third Music Readers, also his Independent. I could arrange to supply these so they could be retailed in Canada as follows:—The First Reader, about 25 cents; Second Reader, about 36 cents; Third Reader, about 36 cents; and the Independent at about 54 cents. Selling them at this price, the party who handled them would make a good profit.

I could arrange for the sale of the charts so that they would cost the party who sold them about $4.20 each, with duty and freight paid. In case these books were substituted for the ones already authorized, I should be willing to send a competent teacher to Canada, without expense to the Government, who would spend considerable time visiting the principal cities and showing the value of music and at what low cost it can be introduced.

I wish also to call your attention to Prince's Courses of Studies and Methods of Teaching, which I send to-day. I wish the attention of your teachers might be called to this book on your published list. We think you have received a full set of our classics for children. I could make arrangements so that all schools in Canada could have a complete set of these books at a price somewhere between six and seven dollars delivered —our twenty-three volumes already published.

I have also written to Mr. Fessenden, who is at work on the Physics, to send you at once the manuscript so that it can be authorized. I saw Mr. Gage, the publisher, and he assured me that he would be willing to conform to your terms.

The books which you will receive have been sent express prepaid. Should be glad to send you a set of the Music Charts should you so desire.

Respectfully yours,

GEORGE A. PLIMPTON.

TORONTO, 26th April, 1887.

DEAR SIR,—I thank you for your copies of the Music Readers, and also for Prince's Method of Teaching. I shall look into them at my earliest convenience in order to ascertain their suitability for us in our Ontario Schools. At first sight it strikes me the Music Readers involve an expenditure of money which would render them objectionable, if it were necessary that each pupil should purchase a copy for his own use.

I hope you will see that Mr. Fessenden does not delay his work on Physics.

Yours truly,

GEO. W. ROSS.

GEO. A. PLIMPTON, Esq.,
New York.

NEW YORK, May 5th, 1887.

Mr. G. W. Ross,
Educational Department, Toronto, Ont., Canada.

DEAR SIR,—Your esteemed favor relative to the Music I find upon my return. I send you to-day by express prepaid a set of Mason's Charts; the last two charts are the only ones really needed. The prices of these charts in this country is $9.00 each; we can

arrange so they could be sold in Canada for about six dollars. By purchasing these charts no books would be required, especially in the lower grades; I do not think there is any system of charts by which the pupils can get along without buying books. One thing is certain, the cost of these books to your pupils would be about half the cost of the Holt books.

I send you to-day a set of the Cada; doubtless many of these could be used and they would only cost the pupil a penny each. We have only just begun to publish in this line, and we feel sure that we have a great feature in this cheap but good music.

I have received from Mr. Fessenden the manuscript and we shall proceed at once to push the matter right through. I hope we shall have the plates all ready inside of four weeks. I take it for granted that there is no doubt but that the book will be authorized. Should we have any reason to doubt it, of course we should not wish to go to the expense of making a complete set of new plates. Thanking you for your esteemed favor, I am,

Yours sincerely,

GEORGE A. PLIMPTON.

STRATHROY, May 25th, 1887.

Hon. G. W. Ross, M.P.P.

MY DEAR MR. ROSS,—I am about compiling and publishing a music book of part songs, choruses, glees, Kindergarten songs, etc., for Public and High Schools. I would like to get from you the following information :—

(1) Do you know has such a book been published in Canada?

(2) Have you an Order in Council that music shall be taught in schools?

(3) If I publish this book, can I do so under the authority and patronage of your Department?

(4) If the volume should meet your approval would you be willing to issue an Order in Council to be used in schools?

(5) Would your Government be willing to give a bonus to assist in bringing out the first edition?

Permit me to intimate that, is not the Province so far advanced in education that teachers should possess as a qualification the ability to teach vocal music? Many think that instrumental music should be taught also in the Provincial Schools; some High Schools (Mount Forest for one) now teach instrumental. But so far as vocal is concerned, the course to obtain a knowledge of the rudiments would be no more difficult—nor yet so much so—for teachers to obtain than many other parts of their course of study.

Then as to books. The Americans are constantly issuing their books and a variety of kinds come into Canada which a Canadian publication ought to take the place of, and we should have a uniform volume for the Province. Hoping to hear from you soon, and that you will favorably entertain my project.

I remain, etc.,

C. G. SCOTT.

TORONTO, 27th May, 1887.

MY DEAR SCOTT,—I send you herewith copies of the books in music now authorized for use in the Public and High Schools. Not being a musician I cannot speak as to their merits, but I am told by those who know that they are very suitable for the purpose intended.

The rule of my Department is not to authorize any book until after its publication, except where the Department secures the services of an editor for the purpose. I have no doubt any book prepared by you would be a valuable contribution to the musical

literature of the country. If published and found superior to those in use, it would be my duty to consider the propriety of authorizing it. You had better consult some of the large printing houses in Toronto in regard to its publication.

Yours truly,

GEO. W. ROSS.

C. G. Scott, Esq.,
Strathroy.

Toronto, 20th July, 1887.

Education Department,
City.

Our attention has been called to an error in the price of "The High School Music Reader," published in your list of High School books. The retail price of said book is 75c. instead of 60c. as published in your list.

Existing arrangements between ourselves and the owners of the plates will not permit us to sell the book at less than 75c.

Yours truly,

FOR THE CANADA PUBLISHING CO. (LIMITED).
B.

Strathroy, July 27th, 1887.

Hon. G. W. Ross,
Toronto.

Dear Sir,—Permit me to enquire of you more particularly *re* the Song Book I purpose bringing out :

(1) For a book to be used in Public and High Schools, would there be any objections, if there were a few sacred songs of such a general character as not to reflect upon any church doctrine or teaching of any church ?

(2) Would a book that could be sold at 25 to 30 cents or $3 per doz. be about the right price ?

(3) How many copies would you suggest for the first edition ?

(4) If the volume met with your approval and suitable for Public Schools, would you oblige me by placing it upon your list of authorized books, (permissively, but compulsorily to be used) ?

The book I should bring out would be one not to supplant those now in use by the Department, but to furnish additional bright, crisp and attractive songs, in cheap form. If you could find time to give me answers to my questions in order as asked, I would be very grateful to you.

Yours, etc.,

C. G. SCOTT.

Toronto, July 29th, 1887.

My Dear Sir,—In reply to your several queries I beg to state : (1) That, in my opinion, it is not desirable to insert many sacred songs in a book intended for Public or High Schools ; in fact, to express my judgment strictly, I would say, do not insert any. (2) A book to sell at 25 cents, neatly bound and well printed, would be more likely to succeed than one at a higher price. (3) As your book will have to pass through the teachers' hands before it attains sufficient popularity to be purchased generally, an edition

of one or two thousand at the outside would be sufficient. (4) I am responsible for only two lists of books: (*a*) authorized and therefore compulsory, and (*b*) those for reference. The latter have a very limited sale.

The most I could do at present, however, would be to place your book upon the latter list. If it meets with the approval of teachers who understand music and are anxious to introduce it into their schools, I would be prepared to consider very carefully its authorization. I am quite willing that you should make it good enough to supplant any book on the subject at present in use.

Yours truly,

GEO. W. ROSS.

C. G. Scott, Esq.,
Strathroy.

"The Elm," Port Perry, January 20th, 1888.

Sir,—Presuming upon what there is every reason to believe, your sincere desire to further the interests of religion in our schools, I do not doubt that you will kindly receive a suggestion which I have long wished to make, and which I think might be carried out without difficulty provided you thought it worth the effort.

In most schools music has some place, of course a legal one, and in a large number hymns or sacred songs are introduced, both words and tunes being widely learned and used by the children. One clear difficulty at once arises here; hymns are in the strongest sense "religious instruction," and yet they are introduced by no authority beyond the fancy of (for the most part) a female teacher. But I will not dwell upon this. Another point, however, will, I feel confident, be thought worthy of the serious consideration of all who more thoughtfully care for the higher interests of education and religion. The hymns or songs in use are largely American, familiar or irreverent, in tone thin and emotional in sentiment. They can leave no deposit for after years of sound knowledge, just feeling, or happy phrase, nothing, indeed, beyond the memory of tasteless, vulgar jingle. The tunes are just as bad, and must hopelessly corrupt the taste. Now, what I beg to suggest is that a selection of some thirty hymns be made from those found in common in the authorized Presbyterian, Church of England, and Methodist hymn books. Let them be of real literary merit and express nothing but the common faith of Christians—the fact of the Apostles' creed, and these best hymns will be sure to have a true devotional character as well. Let them be set to the most appropriate tunes—simple, grave, dignified—and it cannot be doubted that much will be done for the taste and cultivation of the next generation, as well as for their religious instruction. It is well known that many Protestant hymns are found in R. C. Manuals, and many hymns by Roman Catholics have been adopted into Protestant hymn books. This work might well be considered a suitable complement to the Scripture selections which are understood to be now in hand, and be entrusted to the same committee.

I have thought it proper to make this letter private, rather than by making it public to invite controversy, perhaps to the obstruction of your plans.

Trusting that I have made no undue intrusion upon your time or attention,

I have the honor, etc.,

JOHN CARRY.

The Hon. G. W. Ross,
Minister of Education.

Toronto, January 25th, 1888.

My Dear Sir,—There is a good deal of force in the suggestion you make as to the character of the music to be used in the religious exercises of our Public and High

Schools, and were it not for the great difficulties I had in trying to increase the amount of religious instruction through the use of the Sacred Scriptures, I would have less difficulty and, perhaps, less fear, in taking the step you propose. Would it not be well, having regard to the agitation through which we have just passed, to let this matter rest for a little while. Anything proposed by the Department in the way of religious instruction, for some reason or other, excites unusual opposition.

If we succeed along the lines in which you have so ably led in Port Perry, the introduction of selected hymns would, then, be an easy matter.

With assurance of the deepest interest in the work in which you have been so successful,

I remain,

Yours truly,

GEO. W. ROSS.

The Rev. JOHN CARRY, D.D.,
Port Perry.

ALGEBRA.

ST. CATHARINES, January 29th, 1886.

Hon. G. W. Ross.

DEAR SIR,—I forward to you another batch of the Algebra. The work is now being pushed rapidly forward, and it is expected that it will be ready for publication about Easter. Until we are aware of the opinion of the experts you have submitted it to, we do not feel it wise to have many of the pages stereotyped. At the same time the type will want releasing. If possible, we would like to know whether many changes or any, would have to be made, to render the work acceptable. We are anxious to finish it as rapidly as possible.

Mr. Adam wrote me that you had decided to retain the questions at the end of the chapters in History. In that case, would it not be better to eliminate those in the preface? I have slightly recast the preface, to improve its arrangement and literary form. It is still, of course, under consideration.

Kindly let us know at an early date, whether it will be necessary to make any changes in the Algebra.

Yours truly,

W. J. ROBERTSON.

ST. CATHARINES, April 20th, 1886.

Hon. G. W. Ross.

DEAR SIR,—I herewith forward to you another batch of Algebra. There remain some 30 pages of text to be finished, besides answers. I would like to see you some day soon, towards end of this week or beginning of next, with regard to Algebra authorization, and also with reference to final revision of History Primer. Mr. Seath is expected home this evening, when I hope to place the whole of the Canadian History before him. Mr. Adam has taken the liberty of placing in my hands your various emendations and excisions. I presume I am expected to pass an opinion, although it has not been stated in the communications with respect to these changes. I have looked over the whole of the passages marked and have weighed them carefully from different standpoints. I have considered, first of all, the tendency of the changes so far as they will add to or take away from the value of the book as a pupil's text-book. In the next place, what

effect would these changes have on the reputation of both the authors and the Education Department? It is obvious enough that our interests are identical—what will injure one will injure both. The net result of my deliberations has been that I have excised about 4 pages, of which 2 or 3 are struck out of the French period. The book has reached about 204 or 205 pages; my excisions will leave in 200. But as probably you have noticed, some three pages of blank stand between English and Canadian parts, so that about 197 pages is the size of the book.

I frankly confess that I am extremely anxious to have nothing done which will mar the proportions of the book. The French period will, with notes, questions, maps, etc, etc., not contain more than 17 pages, so that really only 14 pages of text have been given to this most interesting period. I have very strong opinions about the inadvisability of eliminating everything of a romantic or interesting character from the early portion of Canadian History. It has been the defect of nearly all our text-books that this portion has been reduced to a list of foreign names, barren of all interest. You are well aware that a few pages of an interesting character added to the text materially assist the pupil in mastering the contents and enable him to keep lively impressions of what he has read. Again, in this matter, our joint reputation is at stake, and as this is my first venture in authorship, I do not wish to send into the market a book which I cannot defend. Merciless criticism I expect, but about this I am indifferent, so long as the work will stand the fire. It is impossible, of course, for me to go into details as to parts I do not think can be excised. Had I the opportunity I could give my reasons for their retention. A good many of the brief excisions have been retained, but not all. As to adding to the price, I am sure that the publishers, as well as myself, would prefer to give a few pages more at the same cost rather than do anything which would injure the work or our own reputation. Nevertheless, I am prepared to submit my judgment in this matter to Mr. Seath, or any body of experienced teachers. I hope to bring with me to Toronto what will prove the final revision of this primer.

Yours very truly,

W. J. ROBERTSON.

St. Catharines, April 30th, 1886.

Hon. G. W. Ross.

Dear Sir,—In thinking over our talk about the authorization of the Algebra, one difficulty has suggested itself to me. When the book is issued a price will have to be fixed upon. If authorized, I wish the price to be 75c., but if not, it should be 90c. or $1.00. What price shall be placed upon it pending authorization? If the lower price, it may have to be increased, but it is awkward to change the cost. I hope the text will be completed before you leave for Europe; there remain now but some 15 pages to print, and I expect that will be finished in two weeks. Of course the answers are yet to be printed. I think it possible for a report to be made by an expert before you leave.

Turning to the History, one point in the chapter "How we are Governed," escaped me when I saw you. I put in the text "*most* of the magistrates" are appointed by the Provincial Governments. You struck out "most." Is it correct? What I was thinking of was that certain magistrates are so by virtue of some official position, while others are appointed by the Dominion Government. You remember the case of Dominion magistrates being appointed in the disputed territory, so it seems to me the word "most" should be left in.

I am sorry you cannot see your way clear to an extension of the time of control of copyright, by C. C. & Co. When it is considered that the present text-books do not go out of use until a year or more hence, it is evident that the publishers of this very troublesome and expensive text-book will have very little for their risk and expense. The price, too, is so low that publishers should be more generously considered. So far as the authors are concerned, I must say that I do not view the prospect with much pleasure or satisfaction. There are certain publishers in Toronto who would treat the

authors with scant justice. I see no way of securing the just payment of royalties. The author is at the mercy of any publisher, as there is no means of knowing whether the "Account Sales" are correct or not. I believe the interest of all concerned will be better served by leaving the publication of this book in the hands of C. C. & Co., for five years, due care being taken to secure the public in matter of price, quality of paper, binding, etc. In fact, it is evident that it would be easier to control one publisher than many.

To change to another topic. Can you inform me whether, according to section 6 and 7, Mechanics' Institutes Act, the Directors have power to appoint the Librarian. We have discussed the subject, but it is still uncertain. The matter will have to be settled Monday evening at the annual election of officers.

Yours truly,

W. J. ROBERTSON.

TORONTO, January 7th, 1887.

MY DEAR SIR,—

. . . . . .

I hope to deal with the authorization of text-book in Public and High Schools, as soon as the next session of the Assembly is over. I shall, of course, consider the fitness of your Algebra for a place among the authorized works on mathematics in the High Schools.

Yours truly,

GEO. W. ROSS.

W. J. ROBERTSON, Esq.,
Collegiate Institute,
St. Catharines.

BRANTFORD, February 5th, 1887.

Hon. G. W. ROSS.

DEAR SIR,—The publishers of "The High School Algebra" have asked Mr. Robertson and myself to extend the work to the end of the High School course. We have consented and signed a contract to that effect.

A few days ago I learned that a new work covering about the same ground, by "Wentworth and McLellan" would shortly appear. Now, my object in writing is to learn, if possible, whether the Department will continue Dr. McLellan, as Examiner on Algebra for First Class Certificates under these circumstances. It would be folly for both publishers and authors to issue a new work, if the Examiner has a work of his own for sale.

If you think favourably of our intention to extend our previous work and will give us "a fair field and no favor," we shall immediately proceed with the work.

Any information you may think proper to give will be thankfully received.

Very truly yours,

I. J. BIRCHARD.

TORONTO, February 9th, 1887.

MY DEAR SIR,—I have not heard anything respecting a new Algebra by Wentworth and McLellan. Of course should a book appear, it would be necessary to consider the composition of Examiners for First Class Teachers. I can only say in regard to your

proposed advanced "Algebra," that you shall be permitted to enter the field fairly as a competitor with other authors, for recognition by the Department.

I understand your first venture was a great success.

Yours truly,

GEO. W. ROSS.

I. J. BIRCHARD, Esq.,
Brantford.

TORONTO, February 26th, 1887.

MY DEAR SIR,—I am now considering the propriety of placing Birchard and Robertson's Algebra on the list of authorized text-books for High Schools, and as the regulations of my Department require the copyright to be vested in the Department, be good enough to let me know whether you are willing to surrender the same on application. The enclosed regulations indicate what your position would be were such surrender made.

Yours truly,

GEO. W. ROSS.

The Rev. WM. BRIGGS, D.D.,
Methodist Book and Printing Co.,
Toronto.

TORONTO, March 7th, 1887.

HON. G. W. ROSS, M.A., LL.B,
Minister of Education,
City.

DEAR SIR,—In answer to yours of the 26th ult., I might say that we are willing to assign the copyright of "The High School Algebra," by Robertson and Birchard, to the Department, providing it is authorized.

We have read the regulations sent us, and believe that both the authors' rights and our rights will be fairly dealt with.

I am, yours truly,

WM. BRIGGS.

GODERICH, August 27th, 1886.

To the MINISTER OF EDUCATION,
Toronto.

SIR,—I would very much like to know what the Department intends doing in the matter of authorizing the new Algebra by McLellan. The books at present authorized are altogether insufficient for the purpose, and I am very anxious to introduce at the very beginning of the year's work, a book that will enable the teacher to send up his class with some confidence. I have examined Dr. McLellan's Algebra, and it strikes me as an admirable book. But I am not writing with the view of promoting any particular book. I wish to have a book that we can *legally* use and which will enable our students to fairly meet the present style of examination. What candidate who had read nothing but the prescribed text-books on Algebra for High Schools, could succeed with this year's paper on Algebra? Why not authorize a book, *some* book, which correctly represents the status required in this subject?

Every mathematical teacher with whom I have conversed during vacation echoes the same sentiments. "Let a more difficult or more extensive book be selected to meet the more advanced style of later years, but let examiners have strict instructions not to go outside either in principles involved or in style of problem."

This seemed to be the general burden of the remarks made.

I have been compelled (along with scores of others) to use Dr. McLellan's books not authoritatively but in a recommendatory way. I do sincerely wish the Department would take immediate action on this matter, authorize this book (which seems a good one) and save us and our pupils a great deal of otherwise useless labour in transcribing questions from other books, and past examination papers. I am certain I am speaking the sentiments of our whole staff with regard to a text-book on Algebra.

I remain, Sir,
Yours respectfully,

A. J. MOORE, B.A.,
Mathematical Master,
Goderich H. S.

TORONTO, September 2nd, 1886.

MY DEAR SIR,—It is not proposed to authorize at present any Algebras recently published. I hope next year to take up the question of revising the list of text-books for High Schools.

Yours truly,
GEO. W. ROSS.

A. J. MOORE, Esq., B.A.,
High School,
Goderich.

LATIN.

GINN & COMPANY, PUBLISHERS,
743 BROADWAY, NEW YORK, Oct. 28th, 1886.

Mr. G. W. Ross,
Minister of Education,
Toronto, Canada.

DEAR SIR,—I take pleasure in sending you the following books, express prepaid :—

Leighton's First Steps in Latin ;
Collier's and Daniell's Beginners Book in Latin ;
Allen and Greenough's Latin Grammar—Cæsar, Cicero and Virgil ;
Wentworth's Primary Arithmetic (Teacher's and Pupil's Editions) ;
Geometry, Grammar, School Arithmetic, Trigonometry and Surveying and Gage's Physics.

Also the following of our Classics for children's series :

Æsop's Fables ;
Lady of the Lake ;
Sketch Book ;
Greek Heroes ;
Plutarch's Lives ;
Gulliver's Travels.

Shall be glad to have you consider these books with a view to the authorization of some of them. Should you desire others of this series to be sent to the Inspectors, if you will kindly inform us to whom to send them we shall be pleased to do so. We also send you a copy of our catalogue.

I had a talk with Mr. Mowry, who is the publisher of *Education* in Boston, the other day and told him about your address. He seemed much interested in it and said that he should write to you at once for the privilege of publishing it in his magazine. It certainly will attract considerable attention, and I hope some arrangement will be made to have him have it.

I am, yours respectfully,

GEORGE A. PLIMPTON.

TORONTO, 10th November, 1886.

MY DEAR SIR,—I have just received the books sent by you on 28th ult., and propose referring them to my Committee of Examiners for consideration.

I know of no Inspectors at present to whom you could profitably send any copies.

Mr. Mowry wrote me respecting my address on Education delivered at Montreal, and offers to publish the same so soon as I can extend my notes. I hope ere long to be able to do so.

Yours truly,

GEO. W. ROSS.

G. A. PLIMPTON, Esq.,
743 Broadway,
New York, U.S.A.

BOSTON, April 2nd, 1887.

Hon. G. W. Ross,
Toronto.

MY DEAR SIR,—Mr. Rose called upon me in New York relative to some arrangement for Allen and Greenough's Latin Grammar, Leighton's First Steps in Latin, Goodwin's Greek Grammar, and White's Greek Lessons. I feel quite sure that I can make a satisfactory arrangement with you on the matter, and with that end in view I will be in Toronto either on Tuesday or Wednesday.

I am, yours respectfully,

GEO. A. PLIMPTON.
Per C.

TORONTO, June 18th, 1887.

Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—Replying to your kind enquiry through Mr. Wilkinson with reference to prices of "Arnold's Latin Prose Composition," with a view to its being placed on the authorized list, we beg to say that we are unable at present to fix a price, awaiting advice from Messrs. Rivingtons, the owners of the book, with whom we have communicated. We hope within a few days to receive their reply.

Trusting that this unavoidable delay may not inconvenience you,

We have, etc.,

W. J. GAGE & CO.

FRENCH.

PARIS, France, 5th January, 1887.

HONORABLE SIR,—I have taken the liberty of forwarding to your address a copy of the 14th edition of *The French Class Book*, which is used in schools throughout the British Empire.

I also beg your kind acceptance of my new work *Le Français*, entirely in French, which I shall have the honor of sending you at the end of the month. I trust that you may find time to examine both works, and if you authorize the use of either of them in Canada, Messrs. W. J. Gage & Co., Publishers, Toronto, will be glad to order copies from Europe. We are ready to offer favourable terms to schools.

I have, etc.,

ALFRED G. HAVET.

EDUCATION DEPARTMENT,
TORONTO, 28th January, 1887.

MY DEAR SIR,—I beg to acknowledge the receipt of your French Grammar, and to state that I have referred the same to the Committee of my Department having in charge the authorization of text-books. If they report favorably I shall communicate with you immediately.

Yours truly,

GEO. W. ROSS.

ALFRED G. HAVET, Esq.,
Paris, France.

PUBLIC LIBRARY,
TORONTO, February 21st, 1887.

DEAR SIR,—The Publishers, Messrs. Crosby, Lockwood & Co., London, have sent me the accompanying copies of De Fivas' Elementary French Grammar, with a request that I should place them in your hands. They wish me to say that this is an entirely new book, not merely part of the larger grammar issued in a cheaper form, but is designed to lead up to the complete work used by the senior classes.

I am confident that the book is worthy of a close examination.

Very truly yours,

JAMES BAIN, JR.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 25th February, 1887.

MY DEAR SIR,—I beg to acknowledge the receipt of two copies of De Fivas' French Grammar. His larger book is now authorized. I cannot say what can be done for the one just submitted.

Yours truly,

GEO. W. ROSS.

JAMES BAIN, Jr., Esq.,
Toronto.

TORONTO, 1st March, 1887.

GENTLEMEN,—I am now revising the list of authorized text-books for use in the High Schools of the Province of Ontario. Among those already authorized I find a grammar published by your house, of which De Fivas is the author. The book is sold at a higher figure than the cost of production would warrant. I am in a position to substitute for it some other book which would serve my purpose equally as well, and which can be sold for less money, but would prefer retaining De Fivas' grammar if the price could be reduced. The Canadian publishers are Hunter, Rose & Co., as no doubt, you know. Be good enough to inform me as to any reduction you are prepared to agree to, in order that I may decide as to its retention on the authorized list.

Yours truly,

GEO. W. ROSS,
Minister of Education.

Messrs. CROSBY, LOCKWOOD & Co.,
7 Stationers' Hall Court,
Ludgate Hill,
London, Eng.

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7 STATIONERS' HALL COURT,
LONDON, 24th March, 1887.

SIR,—We beg to acknowledge receipt, on the 18th instant, of your favor of the 1st inst.

We regret to hear that it is considered that De Fivas' French Grammar is sold at too high a figure. We have frequently revised the price at the instance of certain booksellers of your Dominion, who have represented that an American unauthorized edition has been offered at a lower price, and we thonght we had entirely met that case.

Having a few years ago issued a greatly improved, modernized, and enlarged edition, we recently thought it advisable to have it printed by Messrs. Hunter, Rose & Co., and copyrighted in Canada so as to exclude any American reprint thereof, and we were under the impression that the book trade in Canada were pleased with the arrangement and satisfied with the price at which the books is supplied to them.

However, on your representation, we have again gone into the matter, and are glad to find that we can make an appreciable reduction on the price at which it can be supplied to the wholesale Canadian trade. At present Messrs. Hunter Rose & Co., supply it to them at 50cts. in the usual leather binding. We find that that price, in that binding, can be reduced by 6c. viz., to 44cts. ; but if it will equally answer your purpose to use it in a strong *cloth* binding—almost the same in appearance, a sample of which we send you by this post—we could make a further reduction of 6c. in the wholesale trade price, viz., to 38c.

These are the prices at which we are prepared to authorize Messrs. Hunter, Rose & Co. to supply the book, or we could supply it from here to the booksellers at a lower price, in consequence of the greater cheapness of production here, which would amount to about the same thing when the cost of freight, duty, etc., is added.

We trust that this considerable reduction will meet your views and lead to the retention of the book on your list of authorized text-books.

By this post we also have the pleasure of sending you a copy of an "Elementary French Grammar," based upon De Fivas', selling price here 2/, which we are hoping will be found suitable for admission to the list to meet the wants of junior classes ; and if so we would carefully consider the lowest price at which it could be supplied to Canada.

We shall esteem it a favor if you will kindly let us know whether our proposition as regards the complete grammar meets your views, and in which binding; and also whether you regard the Elementary Grammar as admissable to the list for junior classes in your schools.

Thanking you for your communication and waiting your reply,

We remain, sir,
Your obedient servants,

CROSBY, LOCKWOOD & CO.

The Hon. G. W. Ross,
Minister of Education,
Toronto.

Toronto, 5th July, 1887.

My Dear Sir,—I would like to revise the list of authorized books for use in those public schools where both French and English are taught. You are aware that the only authorized books in such schools now are, in English, the authorized English books; in French, the books accepted by the Protestant and Roman Catholic sections of the Council of Public Instruction of Quebec. As these lists are very old, and as it is desirable to keep up with the improvements that have been made since 1869, I would like to get such suggestions in regard to books in the French language in the subjects of the public school curriculum as you might think would be useful.

Yours truly,

GEO. W. ROSS.

Theo. Girardot, Esq.,
Insp. Public Schools,
Sandwich.

Same letter as above sent to W. J. Summerby, Esq., Insp. Public Schools, Russell. Also to O. Dufort, Esq., Asst. Inspector Public Schools, Curran.

Sandwich, July 23rd, 1887.

To the Hon. G. W. Ross.

Hon. Sir,—In reply to your letter of the 5th inst., I have the honor to submit the following to your consideration:—

1st. Looking over the list of French books in use in Ontario mixed schools, I find that there are too many, for I think that by limiting the number and choosing good works it will be better.

2nd. My reasons are that in all French schools English being taught (I speak for Essex) all English text-books authorized for our Public Schools are used, consequently we do not need such a large number of French books, the most important are the French Readers, and other works regarding the language.

As the best French Readers, and I must say the only ones that I know of, are the series of Montpetit, I would advise that they be authorized. Although there may be a couple of lessons which might be objected to by some Protestants, yet I see nothing in those lessons which can hurt their feeling any more than some passages of the English text-books could hurt the feelings of Catholics. I must confess to you that having no other French Readers of any account, the Montpetit's have been in use in our schools for quite a number of years, where the French pupils are in a great majority, and I never heard any complaints from Protestants.

The other books in the list below, being literary or scientific, there is nothing in them which can be objected to in regard to sectarianism. Hoping that you will pardon the delay in answering your letter,

I have the honor, etc.,

THEO. GIRARDOT.

List of books which, in my humble opinion, should be authorized in French schools in Ontario :—

Alphabet Phonétique, Méthode de Lecture et de Pronunciation, par Montpetit et Marquette.
Premier livre de lecture, Montpetit et Marquette.
2ième " " "
3ième " " "
4ième " " "
5ième " " "
Cours de lecture à haute voix, par l'abbé P. Lagacé.
Arithmétique Commerciale, par les frères des Ecoles Chrétienne.
Cours Elémentaire de langue Française, par les frères des Ecoles Chrétienne.
" Moyen " " "
" Supérieur " " "
Géographie Illustrée, Primaire, " "
" " Intermédiaire, " "
Histoire du Canada, " "
" d'Angleterre, " "
Algèbre, " "
Géométrie, " "
Dessin Linéaire, " "
Méthode Pratique et raisonnée de style et de composition, par E. Robert.
Dictionnaire Classique Universel, par Th. Benard.
Grammaire Française élémentaire, par L. P. B.
Exercise " " "
Nouveau Cours de langue Anglaise selon la méthode d'Ollendorf.
Grammaire Française, Bonneau et Lucon.
Exercise " "
Dictionnaire Anglais-Français et Français-Anglais, par Surenne.
J. B. Bolland et fils, libraires à Montréal, enverrons une copie des ouvrages mentionnés ci-dessus à monsieur le Ministre en lui en faisant la demande.

RUSSELL, July 14th, 1887.

DEAR SIR,—I have the honor to acknowledge the receipt of your letter of the 5th inst., respecting text-books for the use of the Public Schools in which both English and French are taught.

In English there is no difficulty, as we simply use the authorized text-books. But I know of no suitable reading books in French, the Montpetit series, recommended by Mr. Dufort aud Mr. Girardot, being, in my opinion, quite unsuitable for Public School use, as regards both subject matter and gradation. If the probable demand would justify the expense, I think it would be well to have the Second and Third books of the Ontario Readers translated into French. There would then have to be prepared new First books in French, which of course should be adapted to the phonic method of teaching. It would be an easy matter to find a suitable book for advanced pupils to use to complete the course in French reading and literature.

With reference to Geography and History, it seems to me that if the course laid down in English is followed it will not be long before pupils by the time they come to study these subjects from a book, will be able to use the English text-books.

For drawing, the letter-press of the authorized series, of the earlier numbers at least, could be translated into French.

In arithmetic and in French Grammar and Composition, books to which no objection can be taken will be found in the list recommended by the Department.

Yours etc.,

W. J. SUMMERBY.

TORONTO, July 21st, 1887.

MY DEAR MR. OUIMET,—You will, from a copy of the regulations herewith, on page 81, find that the authorized books used in Public Schools in Ontario in which the French language is spoken, were those accepted by the joint councils of Protestant and French schools for Quebec in 1869. The list, I fear, has become somewhat obsolete and would bear revision. Would you kindly inform me if the same list is still in use in your Province? If any change has been made, please send me revision; if no change has been made, would you kindly mark a list in such a way that I can see the books which you think most suitable, or name other books which might be used in public non-denominational schools to advantage? I send you some papers and books in which, I trust, you will be interested.

Yours truly,

GEO. W. ROSS.

GIDEON OUIMET,, Esq.,
Superintendent of Education,
Quebec.

DEPARTMENT OF PUBLIC INSTRUCTION,
QUEBEC 28th July, 1887.

The Hon. G. W. Ross,
Education Department,
Toronto, Ont.

DEAR SIR,—I have the honor to acknowledge the receipt of your kind letter of the 21st inst., together with documents, and in reply to say that in a few days I will probably be in a position to give the desired information.

I have the honor to be,
Dear Sir,
Your obedient servant,

GIDEON OUIMET,
Superintendent.

TORONTO, August 16th, 1887.

MY DEAR SIR,—In considering the authorization of books in the French language for Public Schools where French is spoken, it appears to me, if I could secure a suitable series of French Readers, that it would fully meet the difficulties of the case. As I

have thought it out, it appears to me in this way: the English-speaking children obtain all they require, if they are taught to read French and as much grammar and literature as might incidentally be taught from a French reading book. Geography, Arithmetic and History to English pupils might be taught from the authorized text-books. In the case of those who speak French, the authorized text-book meets all the necessities of the case, so the problem to be solved is limited to the consideration of the point already stated, namely, would the preparation of a series of French Readers enable us to teach in the Public Schools as much French as our English-speaking people might acquire.

I hope I have made myself understood.

Kindly let me know how this view of the case appears to your mind.

Yours truly,

GEO. W. ROSS.

W. J. SUMMERBY, Esq.,
School Inspector,
Counties Prescott and Russell,
Russell.

Similar letters were sent to Theo. Girardot, Esq., Inspector of Public Schools, Sandwich.

O. Dufort, Esq., Assistant Inspector of Public Schools, Curran.

D. McDiarmid, Esq., M.D., Inspector of Public Schools, Athol, Glengarry.

RUSSELL, August 19th, 1887.

DEAR SIR,—In reply to your letter of the 16th inst., respecting the authorization of books in the French language, I have to say that I quite agree with you in the opinion that if you "could secure a suitable series of French Readers, it would fully meet the difficulties of the case."

Yours, etc.,

W. J. SUMMERBY.

Hon. G W Ross,
Toronto.

INSPECTOR'S OFFICE,
SANDWICH, August 20th, 1887.

To the Hon. G. W. Ross,
Minister of Education.

HON. SIR,—In regard to your letter of 16th instant, I have the honor to report as follows: I fully endorse what you say in the first part of your letter in regard to schools attended by French-speaking children; as for the others, if I understand you well, the problem to be solved is limited to know if the preparation of a series of French Readers would be sufficient to teach as much French as our English-speaking people might require. This perfectly meets my view of the case, provided said readers are prepared in a manner which will enable the pupil to learn all the grammar and literature necessary for a common education in the French language. Hoping that my humble opinion may be of some utility,

I have the honor to be,
Honorable Sir,
Your obedient servant,

THEODULE GIRARDOT,
I. P. S. No. 1, Essex.

CURRAN, September 3rd, 1887.

SIR,—In answer to your letter of the 16th ultimo, I beg to say that the authorization of a suitable series of French Readers would be much appreciated, and undoubtedly would give general satisfaction. By the new series the pupils would be taught as much spelling, literature and composition as might be required, but I doubt if this would apply to grammar. I do not think that French pupils would be proficient enough in English by the time they would be required to make use of the text-book in geography, arithmetic, and history. You say, "would the preparation of a series of French Readers enable us to teach in the Public Schools as much French as our English-speaking people might require?" That depends on the qualification you wish them to attain; if you mean that they should write and parse French properly, grammar should be learned and understood thoroughly; thefore, my opinion is that it ought to be used as a special text-book.

I have, etc.,

O. DUFORT,
Asst. Insp. Pub. Schools.

The Hon. THE MINISTER OF EDUCATION.

ATHOL, August 24th, 1887.

Hon. G. W. Ross,
Toronto.

DEAR SIR,—I have to state in reply to your letter of the 16th instant, that for use in Public Schools where an acquaintance with French is required, a series of French Readers will be all the text-books in that language which will be needed by English-speaking children. I am also of the opinion that were it possible to secure good French translations of the authorized readers up to. and including the Third Reader, many English-speaking pupils would be induced to take up the study of the language, with better results than the superficial knowledge of it, possessed by the average High School graduate.

Yours, etc.,

D. McDIARMID,
P. S. Inspector.

MONTREAL, September 3rd, 1887.

Hon. G. W. Ross,
Minister of Education,
Toronto.

DEAR SIR,—We have the honor to send you by post, to-day, specimen copies of—

Duval's Elementary French Grammar, 25c.;
" Lectures choisies, 30c.;
Darey's Principes de Grammaire Française, 50c.;
" Lectures Françaises, 75c.,

which we submit to you for inspection with a view to approval, if found suitable for introduction into the schools of Ontario.

Mr. Duval was a long time teacher in our Public Schools. His books are also used in New Brunswick.

Prof. Darey is the Professor at McGill and at the Normal School.

We need not enter into further details. The books will speak for themselves. The French books now in use in Ontario are foreign books, and these, we are sure, will compare favorably.

We send also a copy of Sir Wm. Dawson's Zoology. The leading feature of this book is that all the illustrations are chosen from Canadian species.

The students need not go outside of Canada for specimens to illustrate every species, genus or order. The foreign book often selects typical specimens among animals not found here.

Yours truly,

DAWSON BROS.

TORONTO, September 20th, 1887.

SIR,—I am directed by the Honorable the Minister of Education to convey to you his thanks for the following document, which has been duly received: Books as per your letter of 3rd instant.

I have the honor to be, Sir,
Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. DAWSON BROS.,
Montreal, Que.

OTTAWA, 36 Daly Street.

To the Hon. G. W. Ross,
Minister of Education,
Toronto.

HON. SIR,—I beg to submit to your examination an "Introductory French Course," of which I forward you a copy by the same mail as well as to Messrs. J. E. Hodgson and J. Seath, and to petition for the placing of that work on the list of those authorized for use in the schools of the Province of Ontario. I am the author of it and have the copyright in my name.

As I have been since February last entrusted with the teaching of French in the Ottawa Model School, I feel the want of a book more suited to the purpose than any of those most used in the city, and my Introductory French Course, it seems to me, would best suit the requirements.

Each of the other works is certainly distinguished by real advantages, and, at the same time, presents faults which in the course of teaching, cause loss of time in the class and incertitude to the pupil in his private work.

Thus, De Fivas' Grammaire des Grammaires, which is certainly very good for advanced students, is too hard for young beginners especially, mostly because of its lack of exercises in French for translation into English, which would be a stock of model sentences for imitation into French. Besides, on account of the many additions, unfortunately not all for the better, some exercises are very defective in not agreeing with the new order of the rules.

Fasquelle's French course, used here in the Collegiate Institute, is excellent as to the arrangement of the exercises, but mixes the subjects together—idioms and grammatical rules, some rather obscurely worded—in such a way that a pupil has great trouble to find in it the rules he requires.

When Bue's First French Book appeared I was much pleased with a first look at its contents, concise rules, short vocabularies, French readings, and index. But trial with pupils is the great test of value, and I found this little book wanting in many respects. The exercises are too few on the contracted article, on the personal pronouns, on the interrogative and the negative conjugations of verbs. The manner of derivation of secondary tenses from the primitive tenses is indeed conspicuously mentioned, but

there is, as in all other French courses that I have seen, no practical instruction given on that derivation, which is, however, of the greatest importance to simplify the acquisition of French verbs, as it is for the Latin and Greek verbs. The exercises have also not been prepared with all the care desirable, for words or rules not yet given or not given at all, are sometimes required. On the contrary, many details might, I think, have been advantageously left out, such as most of the irregularities in the formation of the plural of nouns, and of the feminine of adjectives. The index, moreover, is very incomplete. I have been led to say more on this French book, because it is the one adopted for use in the Ottawa Model School.

In 1883, I conceived the project of trying myself to do better. I waited, however, to see Prof. Darey's French Grammar, at the time in course of publication. But this work proved rather less satisfactory than any of the others, and at last, I undertook to sum up the results of my experience of thirteen years of French teaching to English pupils, and published the little work which I now submit to you. Since then, my own success with it for over three years both in classes and in private tuition, has fully answered my expectations.

I would especially call your attention to a few of the peculiar features—the treatment of varied-sounds, pages 1, 2, that of the pronouns *en* and *y*, page 62.

Of the relative and interrogative pronouns, pages 68, 69, the rules on the infinitive and subjunctive moods, 74, 76.

On the participles, page 81, and generally those on the verb.

When the conjugation of the two auxiliary verbs is once known, there is but little more to do in order to be enabled to conjugate any verb, but practise carefully on the rules of the formation of tenses and learn the primitive forms given on *two* pages, 90, 96, besides the irregularities printed in italics on page 97. In the index of the words used in the exercises, the references to the pages are a most useful help to the pupil.

Mr. J. C. Glashan with whom I had a few years ago the pleasure to read some French, gives me encouragement in the thought that my request as to my French course may be taken into favorable consideration.

In the hope, therefore, that you may esteem the book likely to be helpful to both teachers and students of the French language in the Province of Ontario generally,

I have the honor to be,
Honorable Sir,
Your obedient servant,

J. A. GUIGUARD.

September 7th, 1887.

GALT, Oct. 1st, 1887.

To the Honourable THE MINISTER OF EDUCATION.

SIR,—It is agreed among the best modern language teachers of the Province that the text-books in French at present authorized are very unsuitable. Bué's "First French Book" is too meagre, especially as regards exercises; De Fivas' Grammar has some good features, but the exercises are constructed on an antiquated and most unsatisfactory plan; while Cassell's "Lessons in French" has excellent exercises, but the theoretical part is very fragmentary and unsystematic.

Some three years ago I conceived the idea of compiling a work that might combine the excellencies and avoid the defects of these and other text-books. I have been working at the plan ever since, giving it much thought, and testing the results in my classes. Several of my friends have encouraged me in the work, Mr. Squair especially having consented to associate himself with me. I have so far progressed with the work that I could commence publishing at once, though I would prefer not to do so till next summer, when I could have the whole of it ready for the printer. No publisher, however, is

likely to undertake the task unless there be a possibility of its use being authorized, or at least permitted in our High Schools. My present purpose in writing you is to ascertain if we may hope for such authorization or permission.

I have, etc.,

A. W. WRIGHT,
Modern Language Master,
Galt Collegiate Institute.

TORONTO, 7th October, 1887.

MY DEAR SIR,—I have given repeated assurances to the public that I would not alter the list of text books just authorized, for a number of years. I have made up my mind inflexibly to this decision, and must enforce the law in regard to any other books that might be placed upon the market, for use in the Public or High Schools. I am very sorry that your experience cannot be utilized for the improvement of our French grammar. When the present list is revised, as it must be by-and-bye, no doubt you would have an opportunity of submitting your book for approval.

Yours truly,

GEO. W. ROSS.

A. W. WRIGHT, Esq.,
Collegiate Institute,
Galt.

GERMAN.

BOSTON, Mass., April 18th, 1887.

Hon. G. W. Ross,
Minister of Education,
Toronto, Canada.

DEAR SIR,—We are glad to be informed that you are considering the recommendation of our Meissner's German Grammar for your Canada schools and Colleges. We write to say that the proofs of the book are being read by fifty of the best professors of German in this country and Canada, and that they all express their belief that it is to be a much better book for class room use, than any now on this or the English market. We should be glad to send you proofs of the book so far as ready if you wish to see them.

We send with this a copy of our new Zoology, which is having a very favorable reception, and which now promises to go into a large number of colleges and schools where the subject is studied. It is on the inductive plan, as are the geology, history and chemistry which we believe we have already sent you, and which you will find described in the catalogue accompanying the Zoology. If there are any other books on our list that you would like to see with a view to recommendation, we shall take pleasure in forwarding copies free.

Respectfully yours,

D. C. HEATH & CO.

TORONTO, 16th May, 1887.

GENTLEMEN,—Any enquiry from Canada respecting copyrights or plates that reaches you through the Rose-Belford Pub. Co., or Hunter, Rose & Co. (the two firms really being one), you may consider as coming through my department. They have liberty to make arrangements with you in regard to several books, subject, however, to my approval. If Meissner's German grammar is revised as suggested by VanderSmissen, the book will certainly be authorized. You may make any arrangements you please through the firm above named, but not with any other.

Yours truly,

GEO. W. ROSS.

Messrs. D. C. HEATH & Co.,
Boston, Mass.

TORONTO, 25 May, 1887.

DEAR MR. ROSS,—I am sorry that I have to trouble you again, though on a different matter this time, viz. : About the proposed authorization of a German Grammar for High Schools.

I am sorry to say that the American publishers and editors of Meissner's German Grammar have refused to comply with the requirements you considered necessary for a Canadian edition, viz.:—

1. They decline to incorporate a reader.

2. Their edition is *not* properly arranged so as to make it possible to assign different portions for junior and senior pupils, either as to exercises or lessons.

3. There is a "plentiful lack" of examples in the lessons, a very serious defect.

4. The explanations are in many places prolix and confusing, and, indeed, sometimes all but unintelligible.

I have tried to impress the American editor with these defects, but without any measure of success.

To this it may be added that several Canadian publishers have declined to undertake the issue of a Canadian edition of a book so saddled with royalties to American and English authors and publishers, and say it would be quite impossible to make such a venture bring any profit, if the books were to be within a reasonable limit of price.

Taking this into consideration, I have concluded to carry out a scheme I have long had of writing a German Grammar for High Schools myself, and have asked Mr. W. H. Fraser, B.A , of Upper Canada College, to co-oporate with me, to which he has consented, and I am sure that one better qualified for the task could not be found.

I have also spoken to Copp, Clark & Co., who have assured me that they will be able to have the book ready next September, and that they can issue it at one dollar. I have long been urged by many High School teachers to write such a grammar ; and I think that the success with which my editions of "Grimmis" "Marchen" and Haaff's "Kaltes Herz" have met, is sufficient proof that I know the requirements both of teachers and pupils thoroughly.

I shall be able to submit to you by the end of next week, (D.V.) the scheme of the grammar as a whole, and also the text of specimen lessons and exercises, and wish you to authorize for the High Schools the following work:

A German Grammar for High Schools, by W. H. VanderSmissen.

I have, etc.,

W. H. VANDER SMISSEN.

Hon. G. W. Ross,
Minister of Education.

THE COPP, CLARK CO. (LIMITED).
TORONTO, 25th May, 1887.

Hon. G. W. Ross,
Minister of Education,

DEAR SIR,—By a letter from Mr. VanderSmissen you will have learned the difficulties connected with the German Grammar, which it was proposed to issue to the High Schools, and his proposal to write and publish one himself, such a one as he knows the High Schools of Ontario require. We have agreed with him to publish it, conditionally on receiving your approval. We propose to get it printed, or rather set up, and plates made in Boston. There is one printer who did the same work for one of Mr. VanderSmissen's previous books and did it well and rapidly. We shall put the MS. into his hands.

We trust that you will see your way to give so much encouragement as will decide Mr. V. to go on, so that we can have it out by September. We propose to make price, $1.00.

Your obedient servants,

THE COPP, CLARK COMPANY,
H. J. CLARK.

TORONTO, 27th May, 1887.

MY DEAR MR. VANDERSMISSEN,—I cannot entertain your proposal to undertake the preparation of a new German Grammar, until I hear from Heath & Co., as I agreed with them to accept Meissner's Grammar, provided it was adapted to our Canadian Schools.

I would like your permission to send them a copy of that part of your letter in which they refused to act upon your suggestions. I hope to be in the office every forenoon next week.

Yours truly,

GEO. W. ROSS.

W. H. VANDERSMISSEN, Esq., M.A.
University of Toronto.

TORONTO, 27th May, 1887.

GENTLEMEN,—I agreed with D. C. Heath & Co. to accept Meissner's Grammar, providing it was revised and adapted to our Canadian Schools.

I have written them in regard to this agreement, and cannot entertain any other proposition for the publication of a similar work, until I astertain what their intentions are.

Yours truly,

GEO. W. ROSS.

Messrs. COPP, CLARK & CO.
Toronto.

TORONTO, 27th May, 1887.

DEAR SIRS,—I am pleased that you have arranged Shepard's Chemistry at the same price as Gage's Physics, viz.: $1.00. I hope the book will have an extensive sale.

I have just received a letter from Mr. VanderSmissen, in which he says that the arrangement entered into with your firm respecting the revision of Meissner's Grammar is likely to miscarry. I was hoping that this matter was definitely settled, and that the new grammar would be in the hands of our pupils and teachers on the opening of our schools, on the 1st September.

I have great confidence in Mr. VanderSmissen's judgment as to what a German Grammar should be, and hope that any reasonable suggestion he may make in regard to the revision of this work will be fully considered before being rejected. I shall write him to-day, to urge him to complete the task which he undertook, to adapt this book to our Schools.

Please favor me with a copy of Colton's Zoology and Woodward's Manual Training.

Yours truly,

GEO. W. ROSS.

Messrs. D. C. HEATH & Co.,
Publishers, 3 Tremont Place, Boston, Mass.,

BOSTON, Mass., May 28, 1887.

Hon. GEO. W. ROSS,
Toronto, Ont.

DEAR SIR,—A telegram having come from the Rose Publishing Co., enquiring price of sheets and bound copies of our Shepard's Chemistry, leads us to conclude that you are considering its authorization for use. We therefore take the liberty of troubling you further in the matter by sending with this the proof sheets of a supplement to our last year's circular on the Chemistry, in which you will find a list of over 150 colleges and schools that have been testing the Chemistry during the past year, and with what success you may learn from the statements following the list of places. We have yet to learn of a school that is not much better pleased with the book in use than they expected to be when they decided on its use. It is easily first among all our texts on this subject, provided of course the book is wanted for laboratory work, and is Chemistry worth studying in any other way than in the laboratory?

We send also a copy of our circular, and a pamphlet on Chemistry in the High Schools that may be of interest to you.

We have given the Rose Publishing Co., the same terms on the Chemistry that were given you by Mr. Plimpton on the Gage's Physics, even though Chemistry is much less widely studied than Physics, and therefore the sale is much less.

Trusting that you may find the book in every way adapted to your needs, we are,

Very truly yours,

D. C. HEATH & CO.,

BOSTON, Mass., May 31st, 1887.

GEO. W. ROSS,
Minister of Education, Toronto, Canada.

DEAR SIR,—Yours of the 27th May is just received. We hasten to send a copy of Colton's Zoology. Woodward's Manual Training is just being put in type, and will not be ready for a month or six weeks. We shall see that a copy is sent to you as soon as it is ready. We are glad to know that Shepard's Chemistry has been considered. We feel sure that you will find it in every way a superior book. Over 200 colleges and schools in the United States are already using it, and with great satisfaction. We hope with you that the book will have an extensive sale.

We wrote Prof. VanderSmissen several days ago, accepting *in toto* the conditions he named with reference to the Meissner's Grammar, so we think you will find no objection on his part to the book.

Even if our American editor does not wish to make any changes which Prof. VanderSmissen suggests, we should make duplicate plates of those pages and parts of the Grammar, and print your edition from the VanderSmissen plates. So you can see that we are bound to please you, him, and everybody.

Mr. VanderSmissen wanted to make the vocabulary to the book. Prof. Joynes had already made provisions for the vocabulary. We sent Prof. Joynes' letter bearing upon the subject directly to Mr. VanderSmissen, and assured him that we would make an effort to arrange the matter all right with Mr. Joynes, but if we could not, we should be willing to make two vocabularies, which, of course, would be unnecessary, for the sake of suiting you and him in every way. We feel, however, that Mr. VanderSmissen has asked some unnecessary conditions, but we have decided to assent to them rather than to lose the authorization, which you are inclined to give it.

Respectfully yours,

D. C. HEATH & CO.

TORONTO, 3rd June, 1887.

MY DEAR SIR,—I understand from Heath & Co. that they have yielded to your request in every particular, so far as the publication of Meissner's German Grammar is concerned. Am I to assume that the work be ready for the schools on the 1st September?

Yours truly,

GEO. W. ROSS.

W. H. VANDERSMISSEN, Esq.,
Toronto.

UNIVERSITY COLLEGE,
TORONTO, 6th June, 1888.

DEAR MR. ROSS,—Copp, Clark & Co. have had from Heath & Co. a letter showing that they do not consider themselves at all as having received any promise of authorization for Meissner's Grammar.

You advised me on Saturday to refuse to have anything to do with Heath's book; but before doing so I should like to have definite assurance that you will authorize my proposed grammar; for if this is not done it would be far better for me to try and improve the "Meissner" as far as possible.

You said also that you would send me a copy of Heath's letter to you, in which, according to your note to me, they had merely said that they had agreed to my proposition. This, however, is no guarantee, nor have I yet received any guarantee, that the changes I consider essential will be made. It merely refers to the terms proposed by me as to my share of the work.

May I ask you to let me have a definite answer on the point of the authorization of my grammar as soon as possible, in order that I may go on with the work without further delay, and oblige.

Yours, etc.,

W. H. VANDERSMISSEN.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 7th June, 1887.

MY DEAR MR. VANDERSMISSEN,—I send you herewith a letter received from Heath & Co. *re* Meissner's Grammar.

I do not wish to be understood as advising in any way on Heath's book, but what I want to be understood as saying is, that if Heath does not allow you to adapt the book to the requirements of our Canadian schools, then I do not want it, and would not authorize it. The letter, however, explains that point.

I cannot undertake to authorize your book in advance. This would be contrary to all precedent. The most I have done, or could do, in such a matter, is to assure you that if the book when prepared is satisfactory, and the best in the market, it will be authorized. It was on these conditions that Copp, Clark & Co. undertook their History.

Yours truly,

GEO. W. ROSS.

W. H. VanderSmissen, Esq.,
Toronto.

Boston, Mass., June 7th, 1887.

Geo. W. Ross,
Minister of Education, Toronto, Canada.

Dear Sir,—The enclosed telegram just comes from Prof. Joynes. His letter has not yet arrived. It is in answer to our enquiry as to whether he would consent to the conditions named by Mr. VanderSmissen, which he, Prof. Joynes, supposed came from you.

You will see, therefore, that there is nothing in the way at this end of the road of the authorization of the grammar, which we shall hope to learn of soon. We trust, however, that you will not oblige us to make so many changes in it as to necessitate a different set of plates for your use. It is being read by fifty of the best teachers of German in this country, as well as by your Profs. VanderSmissen and Fraser, and we are making of it a much better grammar for class-room use than any other on our market. We shall, therefore, hope that you will not find many things in it that will need change after it has passed this ordeal.

We have also written Mr. VanderSmissen that we would accept his conditions, supposing, of course, that they are also your conditions.

Respectfully yours,

D. C. HEATH & CO.

(*Telegram.*)

Columbia, June 5th, 1887.

D. C. Heath & Co.,
3 Tremont, Boston.

Accept Minister's proposition unconditionally. I have written you fully.

DR. E. S. JOYNES,
S. C. College.

Toronto, 10th June, 1887.

My Dear Sir,—I send you herewith a letter and telegram just received from Heath & Co., which you will be good enough to return after perusal.

Yours truly,

GEO. W. ROSS.

W. H. VanderSmissen, Esq.

University of Toronto,
13th June, 1887.

Hon. G. W. Ross,
Minister of Education.

Sir,—On my return from a visit to Guelph, I found your letter enclosing one from D. C. Heath & Co. as to Meissner's German Grammar, which I return herewith, also another letter from the same firm dated May 31.

I carefully examined the proof sheets of the Meissner's as far as published, and regret to find that nothing short of an entire reconstruction of the book would make it suitable for high school work, especially for junior pupils. The grammar is a most excellent one for university students, but is far too overloaded for high school purposes ; nor is there any distinction in the lessons between what is sufficient for elementary pupils, and what should be required only of advanced students, a distinction absolutely essential in any high school grammar.

Yours, etc.,

W. H. VANDERSMISSEN.

Boston, Mass., June 16th, 1887.

G. W. Ross,
Toronto.

Dear Sir,—The enclosed letter concerning Shepard's Chemistry has just come to us from one of your Canadian teachers. We have copied it and send the original to you, inasmuch as you are considering the authorization of this book. We are daily hoping to get news from you that the Chemistry and German Grammar at least, and possibly some of the other books have been accepted.

Very truly yours,

D. C. HEATH & CO.,

Queen's University,
Kingston, June 14th, 1887.

D. C. Heath & Co.,

Dear Sirs,—I have read with a great deal of interest Shepard's Chemistry, a copy of which you sent me a few months ago. In his treatment of the subject Mr. Shepard shows that he has what so many of our text-book writers lack—a knowledge of educational methods. The book is, in my opinion, eminently fitted for use as a text-book, and has the quality of clearness, directness and simplicity which will recommend it to all teachers.

Yours very truly,

W. G. GOODWIN.

Boston, Mass., June, 20th, 1887.

Mr. Geo. W. Ross,
Toronto, Canada.

Dear Sir,—We have just received a letter from Prof. VanderSmissen, in which he suggests that there was a remark in Prof. Joynes' letter as to your "probity," which he, VanderSmissen, considered as a reflection on himself at the same time. We write to say that you certainly must have read Prof. Joynes' letter incorrectly, or, at least, must have interpreted it incorrectly, as he intended to say just the opposite. When we wrote him that we thought Mr. VanderSmissen's terms were unreasonable, he replied, or intended to, we are sure, that certainly the Minister of Education would not be influenced by any

wrong motives or conditions in the matter. We write to express the hope that this misunderstanding may not interfere with the selection of so good a book as Meissner's German Grammar. We think we have written you that about fifty of our best professors of German have read the proofs, and they seem to be almost unanimous in the opinion that it is to be the best book for High School and College use that can be found in English.

As Prof. VanderSmissen thinks highly of Sheldon's German Grammar, we send a copy of that, thinking you may be glad to examine it also with a view to authorization for such schools as wish a brief grammar.

We also send a half dozen circulars on the Chemistry, and in a separate wrapper circulars on the German books that may be of interest to you.

Regretting exceedingly that any such interpretation should have been put on Prof. Joynes' letter, and hoping to hear soon that you have decided to take both the German Grammar and the Chemistry, and possibly some of the other books, we are,

Respectfully yours,

D. C. HEATH & CO.,

TORONTO, 22nd June, 1887.

DEAR SIRS,—Mr. VanderSmissen positively declines to undertake the task of adapting Meissner's German Grammar to our Canadian Schools, and, as without such adaptation, it is quite unsuitable, I have decided to drop it from our list of authorized books. Shepard's Chemistry will be authorized at $1.

Yours truly,

GEO. W. ROSS.

Messrs. D. C. HEATH & Co.,
Boston, Mass.

TORONTO, 24th June, 1887.

DEAR SIRS,—Mr. VanderSmissen must allow me to interpret correspondence with my Department in my own way. I do not consider there was an offensive word in Professor Joynes' letter towards anybody, and never said there was. To say that a man's terms are unreasonable, is quite fair, and casts no reflection.

However, as I wrote you a day or two ago, Meissner's Grammar is off the list. I shall send you a certified list in a few days. Thanks for Sheldon.

Yours truly,

GEO. W. ROSS.

Messrs. D. C. HEATH & Co.,
Boston, Mass.

BOSTON, Mass., June 28th, 1887.

GEO. W. ROSS,
Minister of Education.
Toronto, Canada.

DEAR SIR,—Your favor of the 24th June is received. In the same mail we receive the *enclosed letter* from Prof. Joynes, to whom we had written with reference to the matter referred to in our last, and which you so generously and rightly interpreted in yours just received.

We shall take pleasure in forwarding your letter to Prof. Joynes, that he may be sure that you understand the reference in his former letter, and that it was not intended to be in any way a reflection on you, but rather the very opposite.

Of course, we are disappointed in not receiving your authorization of the German Grammar. We still hope that you may find in Sheldon exactly what you wish. We think we wrote you that Prof. VanderSmissen, before he saw the Meissner, said that the Sheldon was better fitted for your needs than any book he knew of, or essentially that. We would be glad to send duplicate copies of the Sheldon if you care for them for examination purposes. In writing us about the book the 11th of this month, Prof. VanderSmissen said "I still entertain the same high opinion of the work for University classes, and shall speak in its favor whenever and wherever I can." We are therefore hoping that some one of your Canadian dealers may be encouraged to purchase a small edition of us in sheets for University use.

Regretting exceedingly that we have troubled you so much in this matter, and assuring you that we still hold you and your methods in the very highest esteem, we are,

Respectfully yours,

D. C. HEATH & CO.,

TORONTO, 30th August, 1887.

GENTLEMEN,—In reply to your favor of the 26th instant, I beg to state that the list of books enclosed, a copy of which I think was forwarded to you some time ago, is intended to stand for at least five years without change or revision. The Chemistry which we have is just out, and fully meets the requirements of our schools. The book in Zoology, which is in course of preparation, is also written expressly to suit the curriculum. The other books referred to by you are forestalled by books already authorized.

I may add that the text-book question has given me a world of trouble. I find, however, that the difficulties will in future be largely obviated by greater permanency and fewer books in each subject, hence my indisposition to vary the announcement previously made.

Yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Boston, Mass.

BOSTON, Mass., September 17th, 1887.

Hon. GEO. W. ROSS,
Minister of Education,
Toronto, Canada.

DEAR SIR,—Your favor of August 30th came duly to hand. The thing we couldn't understand was why several books were given on some subjects, when, as we understood you, but one book on a subject was to be authorized. Prof. VanderSmissen is here with us, and we have asked him to explain it to us, but he is not able.

Our Meissner's German Grammar is ready, and we send a copy of it with this. Fifty of our best known teachers of German have read proofs carefully, and they assure us that we may safely claim it to be the best *working* grammar for High Schools and Colleges now in the market. Prof. VanderSmissen gives us some information concerning the authorization of books, which makes the matter somewhat clearer than it has been.

Very truly yours,

D. C. HEATH & CO.

TORONTO, 19th September, 1887.

MY DEAR SIR,—I have been asked by some High School masters to suggest that in the new German Grammar there should be a pretty full index. Will you kindly see that attention is given to that matter?

Yours truly,

GEO. W. ROSS.

W. VANDERSMISSEN, Esq., M.A.,
University College,
Toronto.

UNIVERSITY OF TORONTO, 4th October, 1887.

DEAR SIR,—The index to the German Grammar shall be as complete as possible. I have just returned from making arrangements for the printing of the work in the most expeditious manner possible, and feel sure that it will give general satisfaction.

Yours, &c.,

W. H. VANDER SMISSEN.

Hon. G. W. Ross,
Minister of Education.

BOSTON, Mass., October 8th, 1887.

DEAR SIR,—We sent you a few days since a copy of Joynes' Meissner's German Grammar for your inspection, with a view to use.

To-day we send a pamphlet containing vocabulary and index.

The number and emphasis of the good opinions concerning the book that have already come to us make it evident that it is to take its place at once in the very front rank of grammars intended for class work. We should value your opinion of it, and trust you will favor us with it, after you have examined the grammar sufficiently to discover its merits.

Respestfully yours,

D. C. HEATH & CO.

PHYSICS.

HIGH SCHOOL, NAPANEE, 26th Aug., 1886.

The Hon. the MINISTER OF EDUCATION,
Toronto.

DEAR SIR,—After most careful consideration I have reached the conclusion that I shall be able to furnish a more suitable text book in Physics for use in our high schools by modifying the work on that subject prepared by Mr. Gage, of Boston, than by writing one entirely myself.

I have Mr. Gage's consent and promise of assistance, and his publishers, Ginn & Co., will undertake the publication in Boston or in Toronto, alone or in connection with a Canadian company, as may be desired.

I now write to ask what conditions regarding the publication are necessary in order that the books may be eligible for authorization should it prove satisfactory in other respects.

Mr. Gage's book has been in use in the Normal Schools for some time, and I have heard but one opinion of its merits.

As the plates of my proposed edition would not all have to be prepared anew, it could be placed on the Canadian market at a lower price than an entirely new book of the same size.

Respectfully yours,

C. FESSENDEN.

TORONTO, 30th Augnst, 1886.

MY DEAR SIR,—Allow me to refer you to sections 284 to 292 of the regulations respecting authorized text books, in the hope that you will see pretty clearly outlined the policy of the Department in regard to such matters.

I enclose also a copy of the indenture which the publisher of every book authorized since the passage of the regulations has to give.

The adaptation of Gage's "Physics" would, no doubt, suit well the purposes of the Department. The price of the book would be an important consideration, as well as its adaptation.

Yours truly,

GEO. W. ROSS.

C. FESSENDEN, Esq.,
H. M. High School, Napanee.

TORONTO, 17th January, 1887.

MY DEAR SIR,—As I wish to announce the list of authorized books for public and high schools, and, at the same time, the changes which I propose to make in the text books, before the 1st or 15th of March at the latest, would you kindly let me know how your text book in "Physics" is progressing? Also who is your publisher?

Yours truly,

GEO. W. ROSS,

C. FESSENDEN, Esq., M.A.,
Napanee.

HIGH SCHOOL, NAPANEE, 10th Jan., 1872.

DEAR SIR,—In answer to your letter of the 17th inst., respecting a text book on Physics, I would say that I can have the book ready in a short time, if necessary. I propose to adopt the physics of Mr. Gage, of Boston, making such additions as will render it suitable for all grades of teachers, including 1st C, and possibly 1st A.

I wrote to Mr. Seath some time ago, suggesting that it would be well to change the courses somewhat for the different grades of certificates.

I proposed that the work for third class should consist of an elementary course in the following subjects :

I. Matter and its Properties.
II. Dynamics.
III. Molecular Energy—Heat.
IV. Electricity and Magnetism.

For second class a more extended course in the same subjects, particularly in Dynamics.

For first class the same course as for second class, with the addition of Sound and Light, and more on Dynamics and Electricity.

If the plan were adopted the course for each grade would be a preparation for that of the next, and the examination in each grade would include the work of the lower grades, thus insuring a more thorough knowledge of the subject.

Besides, the work for third class would be just that part of Physics required as a preparation for the study of Chemistry, which is compulsory for second class.

Mr. Seath in reply said that this plan would not agree with that of Toronto University. I do not see the force of his statement, as the work for second class would still include the work for matriculation at the University. It would certainly include more, but nothing that, in my opinion, could be properly omitted.

If this arrangement is made for the examination of 1888, a portion of my book might be bound separately for third class work, and sold at little more than half the cost of the whole book; or the whole book might be purchased by a student and used through his whole course of study.

Before putting the book in press, I wish to know whether this proposition meets with your approval.

My book is to be published by Ginn & Co. of Boston, W. J. Gage & Co. of Toronto acting as their agents.

Very respectfully yours,

C. FESSENDEN.

Hon. G. W. Ross,
Education Department, Toronto.

Toronto, 25th Jan., 1887.

My Dear Sir,—I do not think it would be possible to get the University people to change their course in Physics. It will, therefore, be necessary for you to adapt the book to the course prescribed. Although a book planned as you suggest would, no doubt, be more symmetrical, I fear we must stand by the present lines. Anything else would invite criticism, which I am desirous of avoiding at present.

If you look at the Regulations, you will observe that the copyright of every book authorized must be in the hands of the Department. It would be well for you to consider this in dealing either with Ginn & Company, of Boston, or Gage & Co. of Toronto.

Yours truly,

GEO. W. ROSS.

C. Fessenden, Esq., M.A.,
Napanee.

Toronto, 22nd March, 1887.

My Dear Sir,—Some time ago I wrote you respecting your work on Physics, but have had no reply. I would like to know when the book is likely to be ready.

Yours truly,

GEO. W. ROSS.

C. Fessenden, Esq.,
Napanee.

High School, Napanee, 28th March, 1887.

The Hon. G. W. Ross, M.P.P.,
Minister of Education, Toronto.

Dear Sir,—I have received your favor of the 22nd inst. Respecting my book on Physics, I think that beyond doubt it will be ready for the opening of the schools in September. I have taken extra time in order that the book may be as nearly what is required as I can make it.

Very respectfully yours,

C. FESSENDEN.

High School, Napanee, 9th April, 1887.

Dear Sir,—I send by the same mail as this letter a few pages of my proposed book on Physics, to let you see the plan of the book. You will see that the changes I have made in Mr. Gage's work are in the direction of leaving more to the pupils.

By omitting the description of the phenomena attending an experiment, I hope to increase the observing power of the pupil, and at the same time induce him to make the experiment for the sake of seeing what does really take place. While by omitting a statement of the conclusions to be drawn from the phenomena, and substituting leading questions, I hope to increase his reasoning power and teach him to apply facts already learned, and to test and apply theories already formed.

From the printed portion of what I send, you can form an idea of the mechanical execution of the work, as the plates of my book are to be prepared by the same men. Should the plan of the work meet with your approval, or should you require any change, I shall be glad to hear from you before the work is set in type. I shall be able to furnish the publishers with the MS. in a very short time, so that the book, if required, may be ready for use next term.

Very respectfully yours,

C. FESSENDEN.

Hon. G. W. Ross, M.P.P.,
Minister of Education, Toronto.

High School, Napanee, 25th April, 1887.

My Dear Sir,—About two weeks ago I wrote you about my proposed book on Physics, and sent the MS. of the first twenty pages. As it must have reached you during a very busy time, I write again, fearing that you may have forgotten it.

If the book is to be ready for next year's work, it will be necessary for me to have the MS. finished soon, but I am very desirous of knowing whether the plan I have adopted meets with your approval before I spend too much time upon the work.

I understand, of course, that if the book is authorized you must hold the copyright.

If you think best, I will finish the work and present the whole for your approval before it is printed.

Hoping to hear from you at your earliest convenience, I am,

Very respectfully yours,

C. FESSENDEN.

The Honorable
The Minister of Education,
Toronto.

Toronto, 26th April, 1887.

My Dear Sir,—The plans, illustrations and typography of your work on "Physics" appear quite satisfactory, and, from the well-known reputation of your publishers, I think the book will, in these respects, be up to the required standard.

I cannot, however, say anything about the matter or scientific accuracy of the work, as I am too much occupied with other things to give it my attention. It is of the first importance that the book should be ready before the 1st September. Copy returned herewith.

Yours truly,

GEO. W. ROSS.

C. Fessenden, Esq.,
Napanee.

HIGH SCHOOL,
NAPANEE, 3rd May, 1887.

The Hon. G. W. Ross, M.P.P.

DEAR SIR,—The copy which I sent for your inspection has not reached me, though you spoke in your last letter of returning it. If your Secretary did not forget to forward it, it must have been lost in transit.

Even if lost altogether, it is not a serious matter, as its reproduction will not require more than the work of a couple of days; but I do not wish to undertake this until I know that it is lost.

Some of the copy has been already sent to the printers, and I expect to have all in their hands before the end of May.

Very respectfully yours,

C. FESSENDEN.

TORONTO, 21st May, 1887.

MY DEAR SIR,—I have caused diligent search to be made for the missing MS., but to no avail. There is no doubt but it must have gone astray through the post-office. I am relying with the utmost confidence upon your ability to adapt Gage's Physics to our High School curriculum; also to have it ready in time. Please do not fail in either particular.

Yours truly,

GEO. W. ROSS.

C. FESSENDEN, Esq.,
Napanee.

HIGH SCHOOL,
NAPANEE, 23rd May, 1887.

The Hon. G. W. Ross, M.P.P.,
Minister of Education,
Toronto.

DEAR SIR,—I have just received your favor of the 21st inst. The loss of the copy is of no consequence, as I have already reprepared that portion and sent it to the publishers, who now have in their hands fully half the copy for the entire book.

The publishers assure me that they will have the book on the market in time, and I shall do my best to make it satisfactory.

It will include the work for 2nd-class as well as 3rd class, and the portions required for each will be clearly indicated.

Obediently yours,

C. FESSENDEN.

NEW YORK, July 7th, 1887.

G. W. Ross.

DEAR SIR,—Mr. Fessenden, I expect, will be in Boston to-morrow, and will correct the proof of Gage's Physics as fast as it can be set up. There is no doubt but that the plates will be made by August 1st, so that the book will be ready for your schools by September 1st. Mr. Gage, the publisher, said that he had arranged with you for the book to sell at $1.00 retail. We hope that you have considered the question of authorizing the Mason's music charts and books.

If it does not seem advisable for you to remove the Normal system, we trust that you may see fit, then, to have two systems in use. Competition will stimulate us both to create an interest in having music taught throughout the Province. We shall be glad to hear from you when the matter is settled.

Respectfully yours,

GINN & CO.,
Per GEO. A. PLIMPTON.

HIGH SCHOOL,
NAPANEE, 11th July, 1887.

The Hon. the MINISTER OF EDUCATION,
Education Department, Toronto.

DEAR SIR,—My adaptation of Gage's Physics has been in the printers' hands for some time, and I leave to-day for Boston that I may complete the final revise of proofs with the least possible delay. My publishers assure me that the book will be ready in time for the opening of the schools. I see no reason why the plates should not be finished and printing begun before August.

Very respectfully yours,

C. FESSENDEN.

TORONTO, 15th July, 1887.

MY DEAR SIR,—I am glad that you realize the importance of having the "Physics" ready for the opening of the schools in September. It would be a great disappointment to me, as well as likely reflect upon my administration, if the publication of the book was delayed.

Yours truly,

GEO. W. ROSS.

C. FESSENDEN, Esq.,
Napanee.

TORONTO, 15th September, 1887.

MY DEAR SIR,—The copy of the "Physics" placed in my hands to-day shows an error on page 339, which I trust you will correct at once. I told Mr. Gage that only the most pressing orders could be filled while this error remains uncorrected. Will you kindly communicate with him in regard to it immediately?

Yours truly,

GEO. W. ROSS.

C. FESSENDEN, Esq.
Napanee.

NAPANEE, 17th September, 1887.

The Hon. THE MINISTER OF EDUCATION,
Education Department, Toronto.

DEAR SIR,—I have just received your favor of the 15th inst., calling attention to the mistake on page 339 of the High School Physics.

The mistake consists in the repetition of one sentence, and a part of another. That is, the words printed in the sheet lines to the left of figures 248, are a repetition of some of those preceding.

The plate may be easily corrected by striking these words out and putting in their place the four lines at the foot of the page.

This latter arrangement of the page is, as may easily be seen, what I intended, and I cannot understand how the blunder was made.

I will see that a new plate is prepared for that page. In the meantime, copies already printed may have a piece of paper pasted over the superfluous lines, and thus confusion will be prevented.

Very respectfully yours,

C. FESSENDEN.

BIOLOGY.

TORONTO, January 15th 1887.

Hon. G. W. Ross,
Toronto, Ont.,

DEAR SIR,—When in Philadelphia last week, my attention was drawn to a book that is having an immense sale in United States at present, and believe by the best author on the subject. I was thinking the book might be adapted for our schools, so brought one along with me, and now enclose same for your consideration. The book could be made in sections or complete. The retail price is 75c. in U. S.

W. BRYCE.

TORONTO, 20th January, 1887.

MY DEAR SIR,—The book which you sent me was examined some months ago, with a view of placing it upon our list of authorized books, but it was considered as attempting to cover too much ground. You will notice that it deals with Natural History, Botany, Zoology and Chemistry. We have text-books in each of these subjects, treating them more in detail than is done in your book.

Possibly teachers might purchase it for their own private use.

Yours truly,

GEO. W. ROSS.

WILLIAM BRYCE, Esq.,
Wholesale Bookseller, Toronto.

TORONTO, 11th May, 1887,

MY DEAR MR. SPOTTON,—I understand you are preparing a new edition of your work on Botany. Could you not arrange the book so that Part I. would cover the ground for second class teachers and matriculation? I am anxious to have the subject generally taken up in the high schools, but the price is a very serious barrier in my way. If arranged as I suggest (and this is the plan adopted in the authorized Euclids) Part I.

might be sold for 50cts. or 60cts. at the outside. Of course, it will be absolutely necessary that it should contain all that is required for second class work. I have written Gage to the effect that I have pressed this matter on your attention.

Yours truly,

GEO. W. ROSS.

H. B. SPOTTON, Esq.,
Barrie.

TORONTO. 11th May, 1887.

MY DEAR SIR,—I have written Mr. Spotton urging him that in the preparation of the new edition of his Botany, so to arrange his work that Part I. would contain the full course for second class certificates, and that it should be so reduced in size, if necessary, to sell for 50cts. or 60cts. at the outside. Will you kindly co-operate with me in bringing this about?

Yours truly,

GEO. W. ROSS.

W. J. GAGE, Esq.,
Toronto.

TORONTO, May 13th, 1887.

Hon. G. W. Ross,
Minister of Education, Toronto.

DEAR SIR,—I have your favor of the 11th to hand. I called up this morning, but regret that I had not the pleasure of seeing you.

I have written to Mr. Spotton to-day in connection with the Botany, stating your object, and asking him to see you at his early convenience.

Yours faithfully,

W. J. GAGE.

THE COLLEGIATE INSTITUTE,
BARRIE, May 14th, 1887.

MY DEAR MR. ROSS,—I have given very careful consideration to your letter of the 11th, relating to the revised edition of my "Botany" which I am now preparing.

I may say, at once, that the book would never have been issued in two separate parts if the original design had been carried out. Mr. Macoun had undertaken to prepare the second part, while I was engaged on the first, but he was not ready in time, and in fact was finally obliged to abandon the book altogether, and I subsequently completed it. To do good work, even with the lowest classes, I think a brief "Flora" like the second part of my book, is absolutely essential. Gray's "How Plants Grow," very largely used in the schools of the United States, is constituted on this plan. In fact, without the "Flora" that book would be almost useless. Oliver's English work for schools is also made up in much the same way.

I had resolved, therefore, in submitting the revised work to the publishers, to urge that it should no longer be issued in two parts. But even if it were so issued, and so much of the second part as will hereafter be necessary for matriculation were taken out and incorporated with the first part, what would be left of the second part would hardly be worth considering so far as reducing the cost is concerned.

But it would, I think, be a fatal plan to remove the orders specially prescribed for study from their proper place in the classification. The meaning of the classification, so far as these orders are concerned, would be lost.

As to the price at which the book could be issued, I cannot speak with authority. But Gray's little book, with not so much matter, costs, I understand, $1.20. Oliver's English book, quite a small work, is rather more, $1.35 I think. Banth's book (344 pp.), costs $3.00. Even Youmans' First Book of Botany. for children in the Public Schools, costs $1.00, Indeed, I do not know of any work concerning our course, which can be got for so small a sum as you suggest. I suppose one reason why the price of scientific books seems large, is that the sale is comparatively limited. It is perhaps, hardly fair to compare them with reading books and arithmetics, which are used in vast numbers. Again, a very special kind of knowledge is requisite in order to prepare a book dealing with local botany. It would, I venture to say, be impossible for anyone to undertake it without some years of special preparation. The results, when printed, seem small, but a great deal of patient investigation is necessary before pen can be put to paper at all.

The new edition of my book, I may also say, will contain a good deal of new matter and new plates. I have no desire whatever that the book should be unduly expensive; on the contrary, I am most anxious that every facility should be afforded for the pursuit of this subject, but I believe that a work covering the ground of our course, and full enough to do away with any need for referring to a larger work, would not be exorbitantly dear at say the same price as Gray's "How Plants Grow." If it can be published at that price, Canadian students will be at a decided advantage, compared with those of other countries.

I called to see you at the Department last Saturday, but you were unfortunately ill at that time. I would gladly go down again, if you should think a conversation desirable.

Faithfully yours,

H. B. SPOTTON.

The Hon. G. W. Ross.
Minister of Education.

TORONTO, 21st May, 1887.

MY DEAR SIR,—I had a note from Spotton a day or two ago, in which he stated that the new edition of his work on Botany would suit the purpose better if not divided into parts. So far as the curriculum is concerned, it is misleading, because the curriculum is not limited by this division of the book. I would like the new edition to be one book, and would urge you very strongly to it, as I believe it can be done to place it upon the market at $1. With the increased interest now taken in this subject, the sales will naturally be increased.

Yours truly,

GEO. W. ROSS.

W. J. GAGE Esq.,
Toronto.

TORONTO, 21st May, 1887.

MY DEAR MR. SPOTTON,—It is quite possible I underestimated the mechanical cost as well as the peculiar knowledge required for the preparation of a scientific work such as you are engaged on. If the profit arising from the increased price enured to the author, I would care much less as to the price, but when the publisher, who, in this case, is practically taking no risk at all, is mainly benefited, then the circumstances are considerably changed.

There is much in what you say, why the book should not be sub-divided. Would it not be well, then, to drop the distinction into parts and make it one complete book, and let its retail price be $1?

I would like very much to have your permission to press this figure upon the attention of your publisher, Mr. Gage.

Without at present saying so, positively, I shall, in all likelihood, be in my office Saturday week. I am at present at Preston Mineral Springs.

Yours truly,

GEO. W. ROSS.

H. B. Spotton, Esq.,
Barrie.

The Collegiate Institute,
Barrie, May 25th, 1887

My Dear Mr. Ross,—In reply to your letter of the 21st inst. I beg to say that I shall be very willing to urge Mr. Gage to accept the arrangement you suggest as to the form and price of the new edition of my book on "Botany."

As the book will be assured of the countenance of the Department, the publisher will run no risk, and I have no doubt that the increased sales will justify the reduction of the price to $1.

I am sorry to learn that your health is not all you could wish, but I hope you will be benefited by your visit to Preston. I hope to have the pleasure of waiting upon you at the Department on Saturday week.

Faithfully yours,

H. B. SPOTTON.

The Hon. G. W. Ross,
Minister of Education, Toronto,

Toronto, May 20th, 1887.

Hon. G. W. Ross,
Minister of Education, Toronto.

Dear Sir,—I beg leave to acknowledge receipt of your favor *re* Spotton's Botany. As soon as Mr. Spotton places the manuscript in our hands, I shall be glad to issue in such form as will be satisfactory to the Department.

Yours faithfully,

W. J. GAGE.

Toronto, 13th October, 1887.

My Dear Sir,—I am anxious that the new edition of Spotton's "Botany" should be ready by the 1st of January next. Could you let me know how it is getting along? It is frequently asked for by our high school masters.

Yours truly,

G. W. ROSS.

W. J. Gage, Esq.,
Publisher, etc., Toronto.

Toronto, Oct. 15, 1887.

Hon. G. W. Ross,
Minister of Education.

Dear Sir,—I fear that it will be impossible to have the new edition of Spotton's Botany ready for January. Mr. Spotton has sent us a large lot of new illustrations to be made, and has written stating that the whole work of revision has been a very much

heavier task than he had anticipated, thus causing delay, We have written him on several occasions in connection with the matter, and can assure you that not a moment's delay will arise as soon as Mr. Spotton has his work ready for the printers.

May I ask you to kindly have Mr. Wilkinson forward me another copy of agreement which I am asked to sign. I had taken copy received over to the solicitors, and between their office and ours it cannot be found.

If you will kindly forward another I will have it put through at once.

Yours faithfully,

W. J. GAGE.

TORONTO, Nov. 2nd, 1887.

DEAR SIR,—I have, I think, satisfactorily arranged matters so that work will now go on uninterruptedly. I have sent the copy in to the printer, with full instructions in regard to it, and have urged as strongly as possible the absolute necessity of despatch.

Faithfully yours,

H. B. SPOTTON.

The Hon. G. W. Ross,
Minister of Education.

BARRIE, Nov. 14, 1887.

DEAR MR. ROSS,—I think it right to tell you that since my visit to Mr. Gage's ten days ago, I have had no evidence of any activity in botanical matters. The printer promised to push the work through, but I have not heard a word from any of them since.

It has occurred to me that the fullest advantage will be taken of the fact that you consented to italicise the old edition on the authorized list. I believe they are now, in fact, striking off a new lot, the sale of which will, doubtless, be pushed. How would it do to get a definite statement from Mr. Gage as to when the new edition will be ready, and then notify the schools that they should wait for the new edition. The present is a critical time, for if the old edition goes into the schools at the beginning of the New Year it will be impossible to introduce the new one until next September, and the publication will be correspondingly delayed.

No great harm would be done if the new book was not ready for a month after the opening of the schools in January, but it will never do to let the old edition get in at all after New Year's, if the present scheme of work is to be enforced.

Faithfully yours,

H. B. SPOTTON.

The Hon. G. W. Ross,
Minister of Education, Toronto.

EDUCATION DEPARTMENT,
TORONTO, 4th Jan. 1888.

GENTLEMEN,—Will you please mention if the new Edition "High School Botany" is yet published, and if not when it will be issued.

There are urgent inquiries for the book.

Yours truly,

ALEXANDER MARLING,
Secretary.

Messrs. W. J. GAGE & Co.,
Publishers, Toronto.

TORONTO, January 5th, 1888.

ALEX. MARLING Esq., M.A., LL.B.,
Sec. Education Deptment, Toronto.

DEAR SIR,—Mr. Spotton is now with us reading proof. We have the printers at work continually, working night work. Notwithstanding this effort, we do not think that it would be wise to promise until the latter part of January.

We have been a little delayed by the electrotypers getting the work through. Shall, however, lose no time in pushing to completion.

Yours faithfully,
W. J. GAGE & CO.

TORONTO, January 4th, 1888.

MY DEAR SIRS,—I understand Mr. Spotton's "Botany" is being published in two parts, and that the first part fully covers the work required for Third Class Certificates. Is it not then desirable to publish the book in separate volumes, say fifty cents for each volume and one dollar as agreed upon for the two? This would relieve third class teachers from paying for matter not required for their course.

Yours truly,
GEO. W. ROSS.

Messrs. W. J. GAGE & Co.,
Publishers, etc., Toronto.

TORONTO, January 5th, 1888.

Hon. G. W. Ross, LL.B.
Minister of Education,
Education Department,

DEAR SIR,—I shall be very much pleased to carry out your suggestion and publish the part of Botany required for 3rd class teachers in separate form. I do not yet know how many pages the book will make; I would therefore hesitate to fix the price in advance.

As we have already written Mr. Marling to-day, we are pushing the book through to completion as fast as possible. As soon as complete we shall be glad to act upon your suggestion and arrange the price so far as possible to meet your wishes.

Yours, &c.,
W. J. GAGE.

TORONTO, Jan. 6th, 1888.

DEAR MR. ROSS,—I have thought over the matter of issuing our new edition of the "Botany" in two separate parts, and I feel quite satisfied that in the interest of students (of any grade) it would not be advisable to separate the parts. But, as briefly as possible, the objection is this:—Henceforward the examinations in botany will be of the most practical character. It is impossible to do more in the first part of the text-book than to take the student through the examination of typical forms of the various groups laid down for examination. The work thus initiated must be continued by the teacher with the aid of such representative plants as his neighborhood will furnish, and for the satisfactory prosecution of this (by for the most interesting part of botanical work) the Flora

which constitutes the second part of the text-book is essential. So that students would find themselves compelled to buy the second part eventually and this at a greater cost, on the whole, than if the complete work were obtained at first.

I may say that I believe the new work, if sold at a dollar, will be the cheapest botanical work of its kind in existence.

Yours, &c.,

H. B. SPOTTON.

The Hon. G. W. Ross,
Minister of Education.

KEMPTVILLE, Dec. 29th, 1887.

DEAR SIR,—In the Public School Register for 1888. there is given a list of the books authorized for use in Form I. of High Schools. As there was no Botany used in our School previous to July, 1887, the only one we are allowed to introduce is the "High School Botany." A week or two ago I received from the Education Department a card which said that the above named book is not yet published. What am I to do? I have pupils preparing for the third class examination next July. I feel myself too inferior to suggest a compromise, should they fail in Botany, but I would feel considerably annoyed if it were the means of plucking them.

Please let me know, at your earliest convenience, what we had better do. Is the "1887" Edition of Williams' Composition published yet?

Your obedient servant,

H. R. SCOVÉLL,
Bear Brook, Ontario.

EDUCATION DEPARTMENT.
TORONTO, Jan. 4th, 1888.

DEAR SIR,—The two books mentioned in your letter of the 29th ultimo, if not already issued, will be out in a few days.

Yours truly,

ALEXANDER MARLING,
Secretary.

H. R. SCOVÉLL, Esq.,
Bear Brook.

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177 BANK STREET,
OTTAWA, February 27th, 1888.

The Hon. G. W. Ross.

SIR,—I regard with a great deal of pleasure the addition of the subject of Zoology to our science course. The completeness and symmetry thus given to the course is sufficient reason for such a position, but in this case my fondness for this particular subject added enthusiasm to my satisfaction. Accordingly, I commenced to put into practice a design that I had already considered for some time, and began the preparation of a work such as I considered suitable for a text-book upon the subject. I was surprised to see in a list of text-books recently sent to our schools that there was already such a work in preparation. Whether this work will in all probability be suitable for authorization (judging

from the character of the author, etc.) I would like very much to know. If you can inform me upon this subject without breaking any confidence you will do me a great favor.

Secondly, if this book is likely to be authorized, would there be any objections to another?

Yours, etc.,

COLIN A. SCOTT.

TORONTO, 29th February, 1888.

MY DEAR SIR,—Professor R. Ramsay Wright, of the University of Toronto, is now preparing a text-book in Zoology for High Schools, and I have every reason to believe that his work will fully cover the course of study which the regulations prescribe. If so, and if in other respects it is suitable, it will be the only book authorized. It would be premature on my part to say what should be done with any book that you might prepare, but I cannot promise its authorization or even to permit its use in the schools of Ontario in advance.

I am glad that you approve so cordially of the introduction of this subject into our schools.

Yours truly,

GEO. W. ROSS.

COLIN A. SCOTT, Esq.,
Collegiate Institute, Ottawa.

CHEMISTRY.

BOSTON, Mass., July 18th, 1887.

GEO. W. ROSS,
Minister of Education,
Toronto, Canada,

DEAR SIR,—We have printed a thousand Shepard's Chemistry for your market, thinking that would be enough for a first supply, and should be glad to receive from you, or the persons who are to handle it, the reprint you wish put on it. It would be well to make the shipment as early as possible, in order to prevent any possibility of the books not being on hand at the opening of the schools.

Respectfully yours,

D. C. HEATH & CO.

TORONTO, 22nd July, 1887.

GENTLEMEN,—I am very sorry that I did not notify you the moment I decided Shepard's Chemistry should not be authorized. On a reconsideration of the book list it was thought best to leave it off. Any books, therefore, sold in Canada will have to be sold in the ordinary course of trade and at the regular market price.

Yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Boston, Mass.

Boston, Mass., July 26th, 1887.

Geo. W. Ross,
Minister of Education,
Toronto, Canada.

Dear Sir,—Your favor of the 22nd is received. We hasten to say that we are very sorry to learn of your late decision, especially since we had acted upon former letters, in which you said the Chemistry would be considered, and had so informed others. This disappointment seems a little harder to us than it would had we not also failed to get the authorization of the German Grammar. However, we suppose it is all right, and must content ourselves that we have some good books and that they are selling well here. We wish we might make sale of a thousand Chemistries to some one of your dealers, but we suppose there would be no chance of their disposing of them, since you have authorized another book. We should be glad to sell the sheets at a low price to the Rose-Belford Co., or somebody else who cared to consider the matter.

If we should ask you why the Chemistry was dropped we presume you would not care to tell us, still we are somewhat interested in knowing. May we ask what Chemistry was authorized?

Perhaps you would do us the favor of sending us a copy of the authorized list as soon as it is published.

Respectfully yours,
D. C. HEATH & CO.

Toronto, 29th July, 1887.

Dear Sir,—I enclose herewith a copy of our Book List. As I said in my former letter, I am very sorry that it appeared to be the proper thing to leave your Chemistry off the authorized list. You will observe, in the Science Course we have limited ourselves to one book in each department. We found it impossible to give a choice in the other departments, and, for the sake of uniformity, and in order to deal with all authors alike, we applied the same principle to Chemistry. The book, in itself, was not objected to; it was not displaced from any hostile motive, but merely yielded to the principle already stated. I hope the decision finally arrived at will not inflict any loss upon your firm. I am of opinion that the sale of Shepard's Chemistry will be very limited, owing to the authorization of another book.

Yours truly,
GEO. W. ROSS.

D. C. Heath & Co.,
Publishers, etc., 3 Tremont Place,
Boston, Mass.

Boston, Mass., August 26th, 1887.

Geo. W. Ross,
Toronto, Canada.

Dear Sir,—Your favor of the 29th of July with reference to Shepard's Chemistry came duly to hand. It gratifies us to know that the book in itself was not objected to. We are still hoping that, since you have in German two German Grammars, in Physics, three books, and in some of the other branches more than one. you may still conclude to add our Chemistry to the list, for such schools as would prefer it to the one already authorized. We are hoping that since you have not yet authorized a Zoology our excellent text-book on this subject for High Schools may find favor with you.

We shall be able to send you in the course of ten days a copy of our Meissner's German Grammar concerning which we have written and which, we think, you will find in every way an admirable book for High School use. You will pardon us for again troubling you in these matters, in view of the fact that we should prize highly an authorization of some one of our books for use in your Schools. The strong letters that we have received frome some of your leading teachers have, perhaps, led us to unduly hope that such might be our good fortune.

We are about to bring out a new High School Music Reader, Prof. Meiklejohn's book on the English Language, its Grammar, History and Literature, and should be glad to send copies of either or both to you, in case you would care to see them.

Very truly yours,

D. C. HEATH & CO.

TORONTO, 21st Sept., 1887.

GENTLEMEN,—In reply to your letter of the 17th instant, if you look over the list of text-books sent herewith, you will observe that, so far as the Public School course is concerned, the Schools are practically confined to one text-book in each subject. The books in italics may be used, but as a matter of course, will very soon drop out. A similar rule will apply to italicised text-books in High Schools. I did not think it politic or profitable to limit the High Schools to one text-book in each subject, except where the course of study was so defined by the authorities of the University that it would be impossible to find a text-book that would cover the course. When such could not be found, one was specially prepared. Our Chemistry and Physics are illustrations of this adaptation.

Yours truly,

GEO. W. ROSS.

D. C. HEATH & Co.,
Publishers, etc., 3 Tremont Place,
Boston.

TORONTO, 12th August, 1887.

MY DEAR SIR,—I understatand Knight proposes to discuss the subject of "Silver" in his new Chemistry. It is not required in our programme; it would only increase the bulk of the book, and perhaps delay its issue. Please dispense with it. Could you send proofs of High School Word-Book? I would like to see it very much.

Yours truly,

GEO. W. ROSS.

H. J. CLARK, Esq.,
Copp, Clark Co.,
Toronto.

TORONTO, 16th January, 1888.

DEAR SIRS,—It is quite clear from correspondence with High School masters that several pages at the end of Knight's Chemistry must be revised and fuller explanations given on certain points, particularly Mendelejeff's Theory. The only way to do this with

safety to the trade would be to get Knight to prepare entirely new matter and have it set up in separate pamphlet form to be given gratuitously to those who hold the old book. This matter could then be bound in all subsequent editions of the new book. I do not wish another edition of the book published until these alterations are made.

Yours truly,

GEO. W. ROSS.

THE COPP, CLARK CO. (LIMITED),
Toronto.

TORONTO, 23rd January, 1888.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—We duly received yours of 16th instant *re* additional explanations required in the High School Chemistry. We wrote Dr. Knight, and he replies that he is preparing to enlarge Chapter XLII. in accordance, about 12 to 15 pages. While he will do this as you request it, he adds that the three professors in Queen's whom he has consulted pooh-pooh such an idea in an elementary text-book like the High School Chemistry, and he says that as a matter of fact the changes are only desired by a few High School masters who were trained by Professor Pike. The greater number are fully satisfied with the book as it is, some speaking of it most enthusiastically. However, all will be done to your satisfaction.

Yours, etc.,

THE COPP, CLARK CO., (LIMITED).
H. J. CLARK.

BOOK-KEEPING AND WRITING.

BELLEVILLE, January 15th, 1886.

Hon. G. W. Ross,
Minister of Education, Toronto.

SIR,—Should your Department contemplate the authorization of an advanced text-book in the subject of Book-keeping I should like to submit for your examination "The Canadian Accountant," by S. G. Beatty and J. W. Johnson, now in the sixth edition, and "Johnson's Joint Stock Company Book-keeping," now in the third edition.

I have the honor to be, sir,
Your obedient servant,

J. W. JOHNSON, F.C.A.

EDUCATION DEPARTMENT,
TORONTO, 20th January, 1886.

MY DEAR SIR,—I have no intention of authorizing any work in Book-keeping at present.

Yours truly,
GEO. W. ROSS.

J. W. JOHNSON, Esq.,
Ontario Business College, Belleville.

ONTARIO BUSINESS COLLEGE,
BELLEVILLE, August 3rd, 1887.

Hon. G. W. ROSS,
Minister of Education, Toronto.

SIR,—We beg respectfully to call your attention to the copy of the "seventh edition," just out, of "The Canadian Accountant," mailed to your address to-day.

If you purpose authorizing an advanced work on Book-keeping, we beg respectfully to submit our book, which is largely used in every Province of the Dominion. The price may possibly be an objection, but your authorization would make it possible to entirely meet your views in that respect. We would gladly make any changes in the book that you might deem advisable.

The issue of seven editions (1,500 copies each) proves the popularity of the "Accountant," and its right to exist.

We would point out that one of the authors has the highest endorsement of the Institute of Chartered Accountants of Ontario, he being a fellow of the Institute.

We would deem it a very great favor if you will kindly grant the writer a personal interview on any day that you may name.

We have, etc.,
ROBINSON & JOHNSON.

TORONTO, 6th August, 1887.

GENTLEMEN,—The course in book-keeping required for high schools is very limited, compared with that laid down in your excellent book, the "Accountant." I have in preparation now a book embodying all that our curriculum requires, which will sell for 65 cents. We are not able in our high schools to take as wide a course nor as practical a one as is taken in business colleges. We must content ourselves, I regret to say, with elementary work, leaving the higher department for yourselves and others similarly engaged.

Yours truly,
GEO. W. ROSS.

Messrs. ROBINSON & JOHNSON,
Belleville.

TORONTO, 17th May, 1886.

Hon. G. W. ROSS,
Minister of Education.

DEAR SIR,—We have the honor to lay before you completed copies of "The Copy Book of Business Forms, etc.," according to the draft and specimens submitted to you

by Messrs. Clare and McAllister, which will, we trust, in its completed form, meet with your approval and receive authorization for use in the schools of Ontario. We may say that these copies have been somewhat hurried, to be in time to submit to you. We only got the electrotypes on Saturday. The ruling also had to be done by hand, so that we shall hope to produce more finished books in the regular way. The cover on this also is only a type one—temporary. A design is being made in the style of the copy books issued by the Publishing Company and Mr. Gage. The book will sell for ten cents, with the usual discount to the trade.

We respectfully submit these books, and have the honor to remain

Your obedient servants,

THE COPP, CLARK CO. (LIMITED).
H. J. CLARK.

TORONTO, 17th May, 1886.

DEAR SIR,—We would add respecting the Copy Book that it will be stitched through the back—not as these are, through the side—and will be free from the breaks, etc., in the paper.

Yours respectfully,

THE COPP, CLARK CO. (LIMITED).
H. J. CLARK.

Hon. G. W. ROSS.

CLINTON, Aug. 26th, 1886.

To the Hon. the MINISTER OF EDUCATION,
Toronto, Ont.

SIR,—It appears to me that at present there is no available treatise on the subject of Book-keeping, which at all meets the requirements of the course of study for high schools and collegiate institutes. There are certainly some very excellent works published, but they are in my opinion chiefly suitable for commercial colleges only.

For several years I have made a special study of the subject mentioned, having read all the best authors most carefully. I have for a considerable time been teaching book-keeping to both junior and senior classes. In connection with my work as Commercial Master of the Clinton High School, which position I have held for nearly three years, I have examined minutely the Commercial course prescribed, and I therefore feel in some measure at least competent to undertake the preparation of such a book as is needed. In fact, I have already written a large portion of it, although no definite arrangement of the parts has yet been made.

Will you kindly let me know whether the field is open or not for a well prepared and short, but sufficiently comprehensive treatise on Book-keeping. If your reply is favorable, and if you consider me worthy of the honor of submitting for your consideration an outline of what I propose, I shall endeavor to write such a work as will reflect no discredit on the teaching profession of Ontario.

Your humble servant,

H. S. MACLEAN.

TORONTO, 30th August, 1886.

DEAR SIR,—I have no complaints in regard to the text-books now in use on the subject of book-keeping. It is quite possible, however, they do not fully cover the "Commercial course" prescribed for high schools, and a book such as you refer to might be very valuable. I cannot, however, undertake to say in advance whether I could authorize your book or not. The common practice is to submit the book to the Department in print, and after taking the opinion of experts, if found satisfactory, then to authorize it. Could you not get a publisher to undertake this work for you? Any outline of a book in book-keeping would give a very faint idea of its contents or design.

Yours truly,

GEO. W. ROSS.

H. S. MACLEAN, Esq.,
Clinton.

CLINTON, September 3rd, 1886.

The Hon. THE MINISTER OF EDUCATION.
Toronto, Ont.

SIR,—Please accept my sincere thanks for your somewhat encouraging reply to my communication regarding the book I propose.

In answer to your question, I beg to say that I can get a publisher to undertake it, if I can show that there is good reason to believe that a well-written and properly got up book, covering satisfactorily the commercial course prescribed for High Schools and Collegiate Institutes, would be authorized.

If you will be so kind as to inform me regarding this matter, I shall feel under much obligation to you.

I have the honor to be,
Your obedient servant,

H. S. MACLEAN.

TORONTO, 10th September, 1886.

MY DEAR SIR,—A book which would cover the "Commercial Course" prescribed for the High Schools, would certainly be of great use to High School pupils. If you would send me a pretty full outline or synopsis of the work proposed, I would be better able to tell whether your plans are such as could be approved of by the Department.

The question of authorization could not be considered, however, until the book was in type, and a clear understanding arrived at in regard to price, typography, etc.

Yours truly,

GEO. W. ROSS.

H. S. MACLEAN, Esq.
Clinton.

CLINTON, September 14th, 1886.

The Honorable THE MINISTER OF EDUCATION,
Toronto, Ont.

DEAR SIR,—Many thanks for your reply to my communication, and for the encouragement you have given me.

I shall take the earliest opportunity to make such an outline of the work as will show the scope and general plan of it.

If, on the whole, it meets with favor, I shall, of course, be most ready to eliminate anything objectionable, or supply any deficiency that may be pointed out.

I have the honor to be,
Your obedient servant,

H. S. MACLEAN.

CLINTON, September 27th, 1886.

The Hon. THE MINISTER OF EDUCATION,
Toronto, Ont.

SIR,—Owing to severe sickness in my family I have been unable to outline the proposed book as fully as I should like ; but, I trust that what I have given will be found to convey a pretty accurate idea of its scope and design. There will, of course, be many points touched upon of which no mention is made in the outline that I have the honor to submit, and, perhaps, it may be desirable to make a few changes, but these will be of such a nature as not to affect materially the general plan.

The following are some of my reasons for regarding the proposed book suitable for the Commercial Course prescribed for High Schools : (1) It will cover the whole ground and but little more. (2) The explanations in it will be short and explicit, no more assistance being given to the pupil than experience has proved to be necessary. (3) Principles will be taught in connection with examples, and illustrations will precede definition. (4) The exercises will be short, progressive, and each will have a special design. (5) The sets presented will be short and will afford a good test of the pupils' knowledge of the principles involved. Besides this, each will teach some particular thing or things. (6) Principles will be established before practical methods (such as are used in business houses) are introduced, (7) Sets will be given, showing the *best* practical methods in use. (8) The book will contain as much as the average pupil can master in one year, irrespective of the appendix. (9) Double entry being a science mathematically correct, and therefore appealing to reason, is taught first. The sets in single entry are easy, however, and may, therefore, be introduced at a very early stage.

Hoping to receive a favorable reply,

I remain,
Your obedient servant,

H. S. MACLEAN.

TORONTO, 25th October, 1886.

MY DEAR SIR,—I have looked over the introduction to your proposed work on book-keeping and am under the impression that a book on the plan indicated would be very useful. I am not able to compare your scheme with the books already authorized, and, consequently, cannot say from the construction of the outline, if anything would be gained by its publication.

I wrote you before that the rule of the Department—unless a book is prepared under a person appointed for the purpose—is to consider the question of authorization when a book is in type. Unless some publisher will undertake the work for you, either at your risk or his own, I can do nothing in the matter. I return enclosure.

Yours truly,

GEO. W. ROSS.

H. S. MACLEAN, Esq.
Clinton.

CLINTON, October 29th, 1886.

The Honorable THE MINISTER OF EDUCATION.
Toronto, Ontario.

DEAR SIR,—Your favor of the 25th inst. to hand, and also the synopsis of the proposed book. Please accept my sincere thanks for the trouble you have taken and for the encouragement you have given.

As I feel confident of preparing a work that will be suitable for class purposes, I shall try to push the matter through.

I have the honor to be,
Your obedient servant.

H. S. MACLEAN.

TORONTO, 27th May, 1887.

DEAR SIRS,—I see a book published by the Dominion Business College, Kingston, on book-keeping and precis writing and indexing, which you had better get and send Mr. MacLean. He may find some points in it worthy of consideration.

Yours truly,

GEO. W. ROSS.

Messrs. COPP, CLARK & Co.,
Toronto.

TORONTO, 9th September, 1886.

Hon. G. W. Ross,
Minister of Education,

DEAR SIR,—We had the honor of submitting to you some few days ago specimens of our new Copy Book of business forms and accounts, and trust that it realized your idea of what such a book should be and meet with your approval.

We also sent copies to the Inspectors and many of the teachers throughout the Province, and their judgment upon it has been most gratifying; in fact, we may say that it has been enthusiastically in favor of the book. A number of the teachers say that they will adopt it for use in their schools "directly that it is authorized." As this appears to be the only obstacle to its introduction into the schools, and as there is nothing else suited to the programme of studies for Public Schools—writing, fourth class--we would respectfully ask the authorization of this book by your Department on the usual terms.

We remain, your obedient servants,

THE COPP, CLARK COMPANY (LIMITED).
H. J. CLARK.

TORONTO, 15th September, 1886.

DEAR SIRS,—In reply to your letter of the 9th instant asking for the authorization of "Copy Book of Business Forms and Accounts," I beg to state that as this copy book really belongs to the course of study prescribed in writing the Department does not see

any necessity for formally authorizing it. So far, teachers are at liberty to use any copy book in writing that may be agreed upon by the school authorities, and it is intended to place your book of "Business Forms and Accounts" in the same category.

Yours truly,

GEO. W. ROSS.

Messrs. Copp, Clark & Co.,
Publishers, etc., Toronto.

Education Department,
Toronto, March 4th, 1887.

Gentlemen,—The attention of the Minister of Education has been called to the alteration, without the approval of this Department, of the title of the work on book-keeping published by your firm and sanctioned under the title of "Book-keeping by Single and Double entry by S. G. Beatty and S. Clare." As this is contrary to the departmental regulations, under which authorization is granted, an explanation is desired.

The sample copies showing defective binding of your Fourth Books sent to you a few months ago have not been returned, as requested.

Your obedient servant,

ALEX. MARLING,
Secretary.

Messrs. W. J. Gage & Co.,
Publishers, Toronto.

Toronto, March 14th, 1887.

Alex. Marling, Esq., LL.B.,
Secretary Education Department, Toronto.

Dear Sir,—We beg leave to acknowledge receipt of your favor *re* title of "Book-keeping." We did not know that it was contrary to regulations to make the change indicated. However, in compliance with the wish of the Department, in next edition published we will issue with original title page.

We have pleasure in returning herewith sample copies of Fourth Reader, as requested.

Yours faithfully,

W. J. GAGE & CO.

Bathurst, New Brunswick, August 1st, 1887.

Hon. G. W. Ross,
Toronto, Ont.

Dear Sir,—I don't know whether you have finally disposed of the authorization of books, but, if not, I would like to direct your attention to a book-keeping text-book by Wood & McKay, of Kingston.

Since school closed I have had time to examine it very thoroughly, and I think that, with the omission of some arbitrary rules on arithmetic, the book would be more suitable for High School purposes than any I have seen. Of course there may be, and doubtless *are*, better ones, but as this includes some matter on indexing and précis-writing, as well as Book-keeping, it might be well for you to consider whether this book, if published for 50 or 60 cents, might not be the best available.

Yours, very sincerely,

A. P. KNIGHT.

TORONTO, 6th August, 1887.

MY DEAR SIR,—I had before me the book to which you refer, and on making enquiry in regard to its price, etc., I found it could not be placed upon the authorized list.

The one we publish will contain the same excellencies, and sell for less than half the money.

Yours truly,

GEO. W. ROSS.

A. P. KNIGHT, Esq.,
Bathurst, N.B.

TORONTO, 9th August, 1887.

DEAR SIRS,—Before my book list was made up I had secured a copy of your work on book-keeping and examined it thoroughly. It was the best book on the subject in the market for our purpose, but the price at which it was published was so high and the ground covered so extensive that without material reduction in both cases it would not suit my purpose. You are aware that the High School course in book-keeping is necessarily elementary. It is only in a Business College, where special attention is paid to this important subject in all its bearings, that work is done which would require such a book as you have called my attention to. I agree with many of the experts as to its merits.

Yours truly,

GEO. W. ROSS.

Messrs. MCKAY & WOOD,
Kingston.

TORONTO, 6th August, 1887.

MY DEAR SIR,—Are you likely to have all the books which you have in hand ready by the 1st September? May I say that it is of considerable importance that every book authorized should be in the market when the High Schools open.

Yours truly,

GEO. W. ROSS.

H. J. CLARK, Esq.,
Toronto.

TORONTO, 9th August, 1887.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—Your note of 6th received this morning. There is no doubt, we hope, of the new books, viz., Chemistry, Word-Book and Book-keeping, being ready before the 1st of Sept. One is finished—the Word-Book. Mr. Connor is now in city superintending the closing chapters. Dr. Knight is in New Brunswick, but we telegraphed for him to come up and remain until the Chemistry was completed. Nothing of labor or expense is being spared. The only drawback is that the artistic covers we offered prizes for will not be ready. The engraver finds it impossible to complete them in time, so that we shall have to issue the first edition in ordinary type covers.

Your obedient servants,

THE COPP CLARK CO. (LIMITED).
H. J. CLARK.

We sent you a copy of Fraser's "Souvestre" a few days ago, and to-day we send a copy of the "Standard Latin Grammar."

TORONTO, August 12th, 1887.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—On examination of the high school course we find that a knowledge of précis writing is required for certain forms in High School. Will you kindly grant us permission to add a chapter or two to our standard book-keeping, which is one of the authorized text books on this subject.

We shall take good care to prevent any loss to the local booksellers throughout the country, by taking back from them the old edition, on giving them the additional chapters gratis.

To secure a knowledge of précis writing, reference is made to Hunter's précis writing. By carrying our proposal into effect we believe there would be an important saving to the schools; at the same time fully meeting the requirements of the programme.

Awaiting the favor of your reply,

We have, etc.,

W. J. GAGE & CO.

TORONTO, August 22nd, 1887.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—I addressed a letter to the Education Department a few days ago, of which the enclosed is a copy, with reference to the edition of standard book-keeping. I have since seen Messrs. Beatty and Clare, the authors. They have nearly ready the additional matter on précis writing, making in all an edition of about 16 pages. I should like very much to have your kind permission to announce this edition of book-keeping in the new list of school books, and should very much like the name "Standard Book-keeping, and Précis Writing, by Beatty and Clare," written. In looking over the list of authorized text books, I see an omission has been made in leaving out Creichton's Epoch Primer of English History, price 25 cents, which has been on the authorized list for five or six years, as one of the authorized text-books for public schools. This, with Jeffers', was chiefly used in covering the ground in history. Should it, therefore, not be printed in italics the same as Jeffers'?

Yours faithfully,

W. J. GAGE.

For the copy enclosed in letter from Gage of the 22nd August, see letter received from the same person dated 12th August.

TORONTO, 26th August, 1887.

MY DEAR SIR,—I expect to return to the office next week, and shall telephone you immediately, in order that I might ascertain more readily the full purport of your request respecting the Standard Book-keeping and the Epoch Primer.

I shall take care that this delay, if we can agree, will not prejudice you in regard to the alterations suggested.

Yours truly,

GEO. W. ROSS.

W. J. GAGE, Esq.,
Toronto.

TORONTO, 3rd Sept., 1887.

DEAR SIRS,—Be good enough to send me a proof of the matter prepared for the Appendix to the Standard Book-keeping which you desire to have taught. If the matter is satisfactory I shall be willing to allow this addition to be made, on condition (1) that the price does not exceed 65 cents; (2) that an edition of the printed matter be published in separate form and be furnished gratis to such persons as purchased the old edition of the Standard Book-keeping.

Permit me to call your attention to the very inferior plates from which your last edition of the Standard Book-keeping was printed. The authorization of the book must be withdrawn unless the typography is improved, and a better quality of paper used.

Yours truly,

GEO. W. ROSS.

W. J. GAGE & Co.,
Toronto.

TORONTO, September 8th, 1887.

Hon. G. W. ROSS,
Minister of Education.

DEAR SIR,—I herewith have pleasure in returning you agreement signed. The other 1 will hold over a day or two. I have not been able to attend to business for a day or two. As soon as I am better I shall have pleasure in calling upon you in connection with it.

The proofs of the appendix and précis writing for book-keeping will be ready in a day or two, when I shall at once send to you. I note your reference to the desirability of improving the appearance of typography of book-keeping. This we have anticipated doing, but hesitated owing to the uncertainty of its authorization. As soon as possible we shall make the desired changes and submit to you a copy.

In reply to your favor of the 3rd *re* Book-keeping, we would say that the price of Book-keeping with appendix will be 65 cents. We are announcing to the high schools and book trade that we will be prepared to supply the appendix free to all using the old edition. The above, we trust, will be satisfactory.

Yours faithfully,

W. J. GAGE & CO.

EDUCATION DEPARTMENT,
TORONTO, August 18th, 1887.

GENTLEMEN,—Your attention is directed to page 4 of your "New and Revised Catalogue" of public and high school text-books, in which you have included Beatty and Gage's copy books as authorized in June, 1887, for use in public schools.

This is an unwarranted addition on your part to the authorized list, and the Minister desires you to correct in every way possible the false impression your catalogue has created, and at the same time to send out no more of these catalogues unless these books are erased from the list. An explanation as to the error would also be satisfactory to the Minister.

Your obedient servant,

ALEX. MARLING,
Secretary.

C. M. TAYLOR & Co.,
52 Front Street West, Toronto.

TORONTO, 18th August, 1887.

ALEX. MARLING, Esq.,
Sec'y. Education Office, Toronto.

SIR,—In reply to your favor of to-day, we regret that the copy books referred to were inadvertently inserted in our recent catalogue of school books among those authorized for use in the schools of Ontario.

In deference to your wish we will issue no further copies, however, without calling attention to the error by means of a slip printed in red ink, which we will attach to each copy.

Your obedient servants,

C. M. TAYLOR & CO.,
Successors to James Campbell & Son.

NOTE—Catalogues corrected by C. M. Taylor & Co. by inserting printed slips as follows : "Note—Copy books, see page 4, are not authorized by Minister of Education."

ST. JOHN, N.B., September 5th, 1887.

Hon. GEO. W. ROSS,
Minister of Education,
Toronto, Ontario.

DEAR SIR,—By this mail we have the pleasure to send you a set of McMillan's New Brunswick writing books. The enclosed circular from W. Crocket, Esq., A.M., our Chief Superintendant of Education, briefly explains the series. Also, we are authorized by Mr. Crocket to say to you that he will be happy to explain at length the principles of the system, should you so desire. We have every confidence that you will be pleased with the series, and should be gratified to hear your opinion of them.

Our hope is that you may be so favorably impressed as to cause their use in your Province.

Believe us, dear Sir,
Your most obedient servants,

J. & A. McMILLAN.

TORONTO, 15th May,1888.

DEAR SIR,—I am directed by the Minister of Education to acknowledge the receipt of your communication of the 5th instant, and to state that the subject is under his consideration.

Your obedient servant,

ALEX. MARLING.
Secretary.

Messrs. J. & A. McMILLAN,
Saint John, N. B.

HYGIENE.

TORONTO, 1st January, 1886.

DEAR MR. ROSS,—I have looked all the works on hygiene, reports, encyclopædias, etc., in my library, and about a dozen standard works in the Public Library, and send you a paragraph or two embodying all the statistics that I thought worth giving. Please look through and slaughter any you think weak or unnecessary; now, if you know of any others, please put in the track of others. It is somewhat difficult to get reliable statistics free from suspicion of party color. For example, I found statistics from asylums, of the cases caused by drinking—many would with justice reverse the statement and say that the mental condition caused the drinking—we know of such instances. Nelson was an English statistician, quoted by Pasteur, and I find that the statistics which Pasteur credits him with have been copied by Dr. Blyth, Rev. Jas. Smith and a number of other writers. I send you the paragraphs in MSS. to save time and expense, as they are short and fairly copied.

Yours sincerely,

W. OLDRIGHT.

2ND JANUARY.—I afterwards concluded to have it all in print for you.

TORONTO, 14th January, 1886.

DEAR MR. ROSS,—If you dash away so ferociously at "water," we shall have to tell M. Pasteur of hydrophobia fame. However, I have executed all your behests, except striking out "turbidity," which would spoil the "Physical Examination" in the view of any chemist or sanitarian. "Color" and "turbidity" are very different in their indications. A water may be turbid from suspended matter and still have a good color, after settling has taken place; on the other hand, it may be clear and yet of a color which has to be looked into. I do not want to strike out "turbidity," and yet feel in duty bound to obtain your consent to its remaining.

I am very sorry to trouble you on this festive occasion, but you know it is in accord with our principles to take "water" at such a time. I called yesterday, just after you had left your office.

Yours sincerely,

W. OLDRIGHT.

TORONTO, 20th January, 1886.

MY DEAR DR. OLDRIGHT,—The enclosed revise is quite satisfactory. I have not seen, however, the galley with which I dealt so heroically. Let me see it so condensed and amended please, and oblige,

Yours, etc.,

GEO. W. ROSS.

WM. OLDRIGHT, Esq., M. D.,
50 Duke Street, Toronto.

Copy of a Minute of the Department of Education, dated the 7th day of April, 1886.

Upon consideration of a report of the Honorable the Minister of Education, dated the 6th day of April, A. D. 1886, the Department of Education doth hereby order:

That the "Manual of Hygiene" for schools and colleges submitted herewith, be authorized for the use of teachers in all the schools under the control of the Education Department.

Certified.

E. F. B. JOHNSTON,
Clerk Executive Council,
Ontario.

The Honorable
The Minister of Education.

Education Offices,
Winnipeg, Man. 13th April, 1886.

Hon. Geo. W. Ross, M.P.P.
Minister of Education, Toronto, Ont.

Dear Mr. Ross,—I am in receipt of a copy of the new book on "Hygiene," issued by your Department. I think the work valuable, not only for school, but for general use, and it will be a suitable text-book for the people at large, as well as for the children in the schools.

It is easy to conceive how the rate of mortality in a community may be lessened, and its general health rate improved by the dissemination of knowledge upon the laws of health and right living, such as your little book aims to give.

I intend directing the attention of our health authorities, as well as the Board of Education, to the book.

Yours very truly,

J. B. SOMERSET.
Supt. of Education.

Mt. Forest, April 19th, 1886

Hon. G. W. Ross,

My Dear Sir,—The elegantly bound copy of the "Manual on Hygiene" came to-day. For this present and your kind consideration please accept my warmest thanks.

This acknowledgement of services from your hands I value as the highest reward.

Having for a great many years, as you know, felt a deep interest in the teaching of school hygiene, and having expended much time and work on this subject, I now feel amply rewarded in this beautiful testimonial of your appreciation.

With many thanks,

I have the honor to be,
Your obedient servant,

H. P. YEOMANS.

Toronto, 16th April, 1886.

My Dear Dr. Oldright,—Allow me to present you with this special copy of the "Manual of Hygiene" as a souvenir of your valuable services as a joint editor.

Yours truly,

GEO. W. ROSS.

Wm. Oldright, Esq., M.A., M.D.,
Toronto.

TORONTO, 19th April, 1886.

DEAR MR. ROSS,—Your kind note reached me on Saturday, and to-day I received the handsomely bound volume which you have presented to me. For both, please accept my sincere thanks.

I have felt much gratified at hearing from yourself and others, since the completion of our labors, that you are well pleased with the result, and this gratification has been greatly increased by the kind thoughtfulness which has led you to present us with these handsome souvenirs of our association with you and with one another in this work.

I am, yours sincerely,

WM. OLDRIGHT.

Hon. G. W. Ross,
Minister of Education.

TORONTO, 9th September, 1886.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—We beg respectfully to enquire respecting the book on "Hygiene" published a few months ago by the Methodist Book Room, as we understand their edition of two thousand, for which they contracted with the Department, is exhausted. We understand further that the book room has not a living interest in the book; that is to say, "Now their edition is exhausted, they are just on a level with other publishers, will have to tender again for a further edition." If we are correct we should be pleased to tender for a second edition, and shall be glad to know the basis on which we can do so. Is any payment to be made to the Department? What number of edition? Could we have the use of the plates in the Department, or a cast from them? We shall be glad to hear from you on these points. We would not, however, interfere with the book room if in any way the action would be unjust or injurious.

Your obedient servants,

THE COPP, CLARK CO. (LIMITED).
H. J. CLARK.

TORONTO, 18th September, 1886.

SIRS,—The Methodist Book Publishing Company are issuing another edition of the "School Hygiene" on terms and conditions satisfactory to the Education Department.

Yours truly,

GEO. W. ROSS

The COPP, CLARK Co.,
Publishers, etc., Toronto.

TORONTO, 18th September, 1886.

MY DEAR SIR,—The agreement with the Methodist Publishing Company of another edition of the "School Hygiene" should contain the following provisions:

(1) The edition should not exceed 2,000; (2) The paper should be at least 90 lbs toned; (3) The stereotypes used in this edition should be deposited with you as soon as

the edition is published; (4) The publishers should bear the expense of new plates for the chapter on ventilation; (5) No alteration should be allowed in the text; (6) The price of the book should be $1.00, with the usual trade discounts; (7) Paper, typography and binding to be satisfactory to the Queen's Printer.

Close this matter as soon as possible.

Yours truly,

GEO. W. ROSS.

GEO. E. THOMAS, Esq.,
Assistant Queen's Printer, Toronto.

THE METHODIST BOOK AND PUBLISHING HOUSE,
TORONTO, February 15th, 1887.

Hon. G. W. Ross,
Strathroy.

DEAR SIR,—We have just received word from the Superintendent of Education, in British Columbia, that the "Hygiene" has been authorized for use in their Public Schools.

I presume that you will be pleased to learn that the much abused book is steadily gaining ground in public favor.

I am, yours truly,

WM. BRIGGS.
per H. G. WATSON.

METHODIST BOOK AND PUBLISHING HOUSE,
TORONTO, March 12th, 1888.

Hon. G. W. Ross,
Education Department, City.

DEAR SIR,—In accordance with terms of agreement, regarding "High School Hygiene," we now write for permission to use plates for new edition, as our stock is getting low.

We have gone carefully into the cost, and find that, allowing 25 per cent. and 10 per cent. (and the most of our sales for this book have this full discount), we would have no working margin to put the price at 50c.

We have compared our figures with those made independently by Mr. Thomas, and find that the price should be, at least, 60c. for this new edition, which would be 40c. less than the price of present edition; certainly enough drop from $1.00.

I may add that Mr. Thomas agrees with us on this price.

I respectfully request, therefore, that you kindly allow us to use the plates for another edition, and permit the retail price to be as stated.

Of course, we will not put this new edition on the market until the old stock is actually sold, but, as we wish time to bring out the book in as fine shape as we did the first, we write thus early for your kind consent.

I am, yours truly,

WM. BRIGGS.

MISCELLANEOUS.

TORONTO, 5th February, 1886.

DEAR SIRS,—I am very anxious to get off the press, as soon as possible, the book on School Architecture, prepared by Dr. Hodgins.

I am informed that the delay is with the printers. Could you make an extra effort and push it through as rapidly as possible? I want to distribute it among the members next week. Let us have a good proof of your business capacity.

Yours truly,

GEO. W. ROSS.

Messrs. WARWICK & SONS,
Toronto.

BUREAU OF EDUCATION,
WASHINGTON, D. C., May 4th, 1886.

SIR,—I am in receipt of the pamphlet prepared for your Department by Hon. J. George Hodgins, on "School Architecture and Hygiene." This pamphlet is most timely. It is well conceived and admirably executed. The best authorities on school architecture in its relation to hygiene, have been thoroughly mastered, and their views admirably grouped for school officers and teachers. The publication is a most valuable contribution to the literature on this subject and deserves the widest circulation.

I am, very respectfully,
Your obedient servant,

JOHN EATON,
U. S. Commissioner of Education.

To the MINISTER OF EDUCATION,
Education Department,
Ontario, Canada.

TORONTO, 7th May, 1886.

MY DEAR SIR,—I am very glad to learn that you appreciate so highly the pamphlet prepared by my Department on the subject of school architecture and hygiene. I am endeavoring to cultivate a higher taste in the matter of school architecture and the improvement of our public school surroundings. I am sorry to say that in many instances trustees are more governed by a false economy in the direction of school-buildings than by those principles which cultivate the taste and tend to the refinement of the pupils in attendance. Sanitary arrangements are also very much neglected. Your kind words of encouragement are timely, coming as they do from a person having great facilities for observation and a wide experience in school matters.

Yours truly,

GEO. W. ROSS.

The Hon. JOHN EATON,
United States Commissioner of Education,
Washington, D. C.

71 O'Connor Street,
Ottawa, October 7th, 1887.

Sir,—One of the subjects to be taught, and for which certificates are given, in Art Schools and Mechanics' Institutes, is "Building Construction." There has not been published either in the United States or Canada a work on that subject, dealing with the kind of construction almost universally adopted on this side the Atlantic.

There are several English works on the subject, which, though they are good and suitable, as far as England is concerned, are practically useless as books of instruction for Canadian mechanics.

I am, therefore, preparing a work on this subject, which, I venture to think, will meet this want. The illustrations I am making to a uniform scale of half-an-inch to a foot, and they will show the various kinds of brick work and mason work, and all that is essential in carpentery, joinery and iron work, so far as building construction is concerned. In connection with each division of the subject, I shall also give in tabulated form the strength of the various building materials, and notes regarding their proper use.

The number of illustrations will be thirty-five, divided in the following manner, namely: Brickwork 7, masonwork 7, carpenter's work 7, joiner's work 7, ironwork 7, and I am drawing them on sheets 22x15 inches.

I have been asked by several persons well qualified to judge of the matter, to publish the drawings, etc., and I would gladly accede to their request, if I were in a position to do so. If, however, you would kindly give me your permission to issue the work under your authority, I would have no hesitation in publishing them without delay.

If, to use your authority, I require to come under any obligation as to royalty, etc., I shall be glad if you will give me the necessary information, and I shall govern myself accordingly.

May I ask if you have been able to do anything yet with regard to the formation of the educational art collection and gallery we were in correspondence about some time ago.

I remain, Sir.
Your obedient servant,

G. F. STALKER.

The Honorable G. W. Ross,
Minister of Education, Toronto.

Toronto, 10th October, 1887.

My Dear Sir,—The work which you propose to prepare is one very much required, and which, if suitable—as no doubt it will be—ought to be of great service to our Mechanics' Institutes. As it is not, however, on either the Public or High School course, and as my right to authorize text-books seems limited to the school system proper, I am not at liberty formally to authorize it. I am willing, however, to recommend it to our Mechanics' Institutes and Art Schools, if, on examination, I consider it suitable. It should have an extensive sale, as the evening classes in connection with our Mechanics' Institutes are largely attended. For want of suitable buildings, I have not been able to do much in the way of making the art collection to which you refer.

Yours truly,

GEO. W. ROSS.

G. F. Stalker, Esq.,
Ottawa.

Toronto, February 11th, 1886.

Hon. G. W. Ross,
Minister of Education.

Sir,—We will publish the abridged edition of "Baldwin's School Management," to consist of matter to the extent of about 250 pages at the following terms:—

Published price to be 75c., a trade discount of 25 per cent. to be allowed, and an extra 10 per cent. in lots of one gross copies at one time.

Size of book to be Crown 8vo. full cloth.

We to pay the author $100.00 (one hundred dollars) when the book is ready for sale and 5 per cent. royalty or 3¾c. per copy on those sold for the term of 5 years, author to make corrections and revise proof as sent to him.

To be produced in first class style as to printing and binding.

We are, yours respectfully,

WARWICK & SONS.

TORONTO, 18th February, 1886,

MY DEAR SIR,—Have you made any arrangements with Mr. Dawson *re* "Baldwin's School Management." I would like to know what they are.

Yours truly,

G. W. ROSS.

ARTHUR RUTTER, Esq.
Warwick & Sons,
Publishers, etc., Toronto.

Re BALDWIN'S SCHOOL MANAGEMENT.

OFFICE OF WARWICK & SONS,
TORONTO, February 20th, 1886.

Hon. G. W. Ross,
Minister of Education.

SIR,—I did not see Mr. Dawson, but find that following arrangement was made with him:

1st. The book to be about 250 pp. burgeois and Crown 8vo. Full cloth. A good job. Sell at 75c.

2nd. Manuscript to be in our hands not later than May 1st, 1886. Mr. Dawson to send in by instalments, and not keep printer waiting. Mr. Dawson to correct proofs.

3rd. Mr. Dawson to receive $50 when first MSS. is sent and $50 when complete, making $100; also a royalty of 7½c. per copy on all books sold for five years from date of publication.

The above I believe to be full statement. Waiting your further order

I remain, yours very truly,

A. F. RUTTER.

MEMO. OF AGREEMENT with Warwick & Sons respecting the publication of Baldwin's Art of School Management.

1. Warwick & Sons agree to publish the said book in good burgeois type, Crown octavo, full cloth, on paper at least equal to that used in the Ontario Readers, consisting of not more than 280 pages, to sell by retail at 75 cents, with the usual discount to the trade.

2. The editorial supervision of the book to be made by Richard Dawson, subject to revision by the Minister of Education. The book to be ready for the market on or before the 1st August next,

3. The copyright of the said book to be vested in the Education Department, and the right of publication subject to regulations 284 to 292 inclusive, with the condition that no other publisher shall be allowed the right of publication within one year from the said 1st day of August.

4. The said Warwick & Sons agree to enter into such formal agreement as may be required by the Education Department at the request of the Minister of Education.

5. Warwick & Sons further agree to assume all risks, liabilities and costs connected with the publication of the said book.

In witness whereof, etc.

TORONTO, 21st September 1886.

DEAR SIRS,—If you are going to get out another edition of "School Management," it would add somewhat to the value of the book if you published as an appendix the "Syllabus of Lectures" used in the County Model Schools. They would occupy probably eight or ten pages, and are very much sought for by Model School students.

Yours truly,
GEO. W. ROSS.

W. WARWICK & SONS,
Publishers, etc.,
Toronto.

WARWICK & SONS,
TORONTO, September 22nd, 1886.

Hon. G. W. ROSS,
Minister of Education,
City.

DEAR SIR,—We thank you sincerely for kind hint *re* printing Model School Syllabus of Lectures with our School Management as an appendix, and shall avail of first opportunity.

We are, dear sir,
Yours faithfully,

WARWICK & SONS.

TORONTO, August 11th, 1887.

Hon. G. W. ROSS, LL.B.,
Minister of Education,
City.

DEAR SIR,—You kindly suggested to us by letter, dated 21st September, 1886, the desirability of adding as an appendix to our (Canadian) edition of "Baldwin's Art of School Management" the Syllabus of Lectures used in the County Model Schools.

We are now preparing to print another lot and shall adopt your suggestion. However, as it is possible that some alterations may have been made in the Syllabus since last year, we shall be extremely obliged if you will either send us an amended copy or inform us that no change has been made in Regulations of August 14th, 1884, which is the copy we have.

We would also thank you to let us know whether there has been any revision in the portion of School Law and Regulations which already forms an appendix in "School Management" and if so, to provide us with such copy as will enable us to have the latest revision for the book.

We are, etc.,

WARWICK & SONS.

TORONTO, 13th August, 1887.

GENTLEMEN,—Herewith find Syllabus of Model Schools revised to date. The School Law and Regulations contained in your edition of Baldwin have been changed somewhat, but if you call at the office Mr. Marling will give you the revise so far as the Act is concerned, The Regulations will not be ready for a couple of weeks yet. These you can also get, when agreed upon, from Mr. Marling.

Yours truly,

GEO. W. ROSS.

WARWICK & SONS,
Publishers, etc.,
Toronto.

EDUCATION DEPARTMENT,
TORONTO, 1st April, 1886.

DEAR SIRS,—What progress are you making with the work on School Gymnastics? Could you see me about it some day before long?

Yours truly,

GEO. W. ROSS.

WM. WARWICK & SONS,
Publishers, etc.,
Toronto.

TORONTO, 20th May, 1886.

MY DEAR SIR,—I have looked over the proofs "Physical Culture," and think the work is admirably adapted for the purpose for which it is intended. It seems to have been written with very great care, and I am sure the book will be the very best in the market, if the same line is pursued throughout.

Yours truly,

GEO. W. ROSS.

ARTHUR RUTTER, Esq.,
Warwick's Sons, Toronto.

TORONTO, 23rd September, 1886.

MY DEAR SIR,—Would you call Mr. Cope's attention to the new work on "Physical Culture," issued by Warwick & Sons, to see if it does not contain some points that may be of use in his department.

I think the exercises suggested there the best I have seen anywhere.

Yours truly,

GEO. W. ROSS.

JNO. A. MACCABE, Esq.,
Principal Normal School,
Ottawa.

NORMAL SCHOOL,
OTTAWA, 25th September, 1886.

DEAR SIR,—I received a copy of the new book on Physical Culture, from the publishers. I placed it in Mr. Cope's hands. He is much pleased with it, and is making its exercises the basis of his work in drill and calisthenics.

Very truly yours,
JOHN A. MacCABE.

TORONTO, 23rd September, 1886.

MY DEAR SIR,—Would you call Sergeant Parr's attention to the new book on "Physical Culture" issued by Warwick & Sons, to see if it does not contain some points that may be of use in his department?

I think the exercises suggested there are the best I have seen anywhere.

Yours truly,
GEO. W. ROSS.

THOS. KIRKLAND, Esq.,
Toronto.

TORONTO, December 1st, 1886.

Hon. GEO. W. ROSS,
Minister of Education.

DEAR SIR,—At a meeting of the Booksellers' and Stationers' Association of Ontario, held in this city on the 20th October, the Committee on Correspondence reported:

"Your committee would suggest that the association petition Hon. Geo. W. Ross, Minister of Education, to notify the trade through *Books and Notions*, of all new text-books authorized by him, or about to be so authorized."

The report was adopted, and a deputation comprising Messrs. Irving, Hutchison, Bryce, Rothwell and the Secretary, were appointed to wait on you and lay the matter before you for your consideration.

Could you favor us with an interview some time next week, after Monday—in the afternoon? The reason I presume to name time is: Mr. Rothwell lives at Brantford and will have to come over specially for this interview.

Hoping you can spare us an hour in your now, no doubt, very busy time.

I remain,
Yours respectfully,
J. J. DYAS,
Secretary the Booksellers' and Stationers Association of Ontario.

EDUCATION DEPARTMENT,
TORONTO, 2nd December, 1886.

DEAR SIR,—The Minister is at present away, but your letter has been sent him.

Your obedient servant,
ALEXANDER MARLING,
Secretary.

J. J. DYAS, Esq.,
20 Wellington Street East,
Toronto.

TORONTO, December 11th, 1886.

Hon. G. W. Ross,
Minister of Education.

DEAR SIR,—Referring to conversation held with you by deputation from the Booksellers' and Stationers' Association of Ontario, on the 9th inst., I beg to lay formally before you its purport.

We would respectfully request that, at as early a day as practicable you notify, through *Books and Notions* the book trade of Ontario as to any contemplated changes in school books.

We complain that the book trade is suffering under a grievance in the number of books required, or rather authorized to be taught in some subjects, thus necessitating the carrying of more stock than should be necessary, and the likelihood of having valueless books, through changes at the option of the local authorities.

We also complain of the issue of new editions varying in some respects from the first, and therefore make the first edition a useless book.

I remain, dear Sir,
Yours respectfully,

J. J. DYAS.
Secretary the Booksellers' and Stationers' Association of Ontario.

TORONTO, 14th January, 1887.

MY DEAR SIR,—I shall endeavor to carry out the decision arrived at when interviewed by a deputation from the Stationers' Association of Ontario. Your report of the interview is quite correct, the other reports referred to in your paper I have not seen. I hope to be able to reduce the number of authorized text-books in each subject very materially, and fully recognize the claims set forth by the trade, that, if not inconsistent with the public interests, the policy of the Department should be of such a character as would protect them wherever it was possible so to do. The practice of issuing new editions, slightly varying from a previous edition, will certainly be prevented in future. It is a gross infraction of the Regulations of the Department, and a serious loss to the people of Ontario, as well as to the trade.

Yours truly,

GEO. W. ROSS.

J. J. DYAS, Esq.,
20 Wellington St. East, Toronto.

TORONTO, 11th March, 1887.

MY DEAR SIR,—I shall be able to make an announcement in regard to new books in ample time, I trust, to put dealers in the position they desired to be put in, when a deputation met me some time ago. I shall not be ready, however, by the 1st April, but expect to be on the 1st May. This would give four months' notice, as the books would not come into use before the 1st September.

Your correspondent who wrote you respecting the drawing-books, overstated his case. The price of the text-book was not altered in the least by any arrangement with the Canada Publishing Company. If, on account of the size of the book, the Canada Publishing Company altered their discounts to the trade, they ought to be dealt with by the

trade, not by the Department. I cannot guarantee the discounts; I merely guarantee the retail price. You should, in your April number, put this statement forward, as a defence of my position, for I think it is a good one.

Yours truly,

GEO. W. ROSS.

J. J. Dyas, Esq.,
20 Wellington St. East, Toronto.

Toronto, 7th October, 1887.

My Dear Sir,—The annotations published to the Fourth and Fifth Reader are not authorized, and teachers are under no necessity to purchase them or recommend them to their pupils.

In making explanations to the trade on this subject, please make a paragraph of this letter, rather than print it over my signature.

Yours truly,

GEO. W. ROSS.

J. J. Dyas, Esq.,
20 Wellington St. East, City.

Toronto, 26th February, 1887.

Gentlemen,—I am considering just now the propriety of authorizing some text-books for use in the High Schools in the Province of Ontario. The number of pupils attending these schools average about twelve thousand and the constituency for the sale of authorized books is somewhat large.

From the enclosed regulations of my Department you will see that I am debarred from placing any book upon the authorized list, the copyright of which is not held by my Department. In the case of books published in the United States, the English copyright does not apply, but, as I am not disposed to take advantage of the law, I would prefer to make some arrangement with your house, whereby such books as you publish might be sold in Canada on terms fair to all parties concerned. There are several ways in which this might be done: (1) If my Department were furnished with a set of stereotyped plates, I could arrange with some firm in this city for the publication of the work, and pay you a royalty, say not exceeding ten per cent; or, (2) We might arrange to have the printers' sheets bound here, if the price for which they were supplied could be agreed upon. I want to guard against allowing any books used in our Ontario schools becoming the exclusive property of one publisher. Much irritation has arisen in the past because of monopolies of this kind. As I have intended to make some arrangement which will be satisfactory before authorizing any of the books published by your firm, be good enough to let me know, at your earliest convenience, on what conditions the right sought for can be obtained, and oblige.

Yours truly,

GEO. W. ROSS.
Minister of Education.

Messrs. A. C. Armstrong & Son,
No. 714 Broadway, New York City, U.S.A.,

Same letter as above sent to Messrs. Ginn & Co., 9-13, Tremont Place, Boston, Mass.

Note.—Books and trade lists the only reply received from the above.

TORONTO, 26th February, 1887.

GENTLEMEN,—I am considering just now the propriety of authorizing some text-books for use in the High Schools of the Province of Ontario. The number of pupils attending these schools average about twelve thousand, and the constituency for the sale of authorized books is somewhat large.

From the enclosed regulations of my Department you will see that I am debarred from placing any book upon the authorized list the copyright of which is not held by my Department. These regulations were passed to prevent any books used in our Ontario schools becoming the exclusive property of one publisher. Much irritation has arisen in the past because of monopolies of this kind.

As I have intended to make some arrangement, which will be satisfactory, before authorizing any of the books published by your firm, be good enough to let me know at your earliest convenience, on what conditions the right sought for can be granted, and oblige

Yours truly,

GEO. W. ROSS,
Minister of Education.

Messrs. RIVINGSTONS,
Waterloo Place,
Pall Mall,
London, England.

Same letter as above sent to Messrs. Geo. Bell & Sons, York Street, Covent Garden, London, England; Messrs. Cassels & Co., La Belle Sauvage, Ludgate Hill, London, England; Messrs. MacMillan, Bedford Street, Strand, London, England.

NOTE.—Books and trade lists the only reply received from the above, except in the case of MacMillan & Co.

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29 AND 30 BEDFORD ST., COVENT GARDEN, W.C.,
LONDON, April 15th, 1887.

Hon. GEO. W. ROSS,
Minister of Education,
Toronto.

DEAR SIR,—We have the pleasure of sending you, through Messrs. Copp, Clark, a number of our educational books, some of which we hope you will be able to place on the list of authorized text-books in High Schools and Collegiate Institutes of Ontario.

We gather from page 82 of the Regulations that "no particular editions of the text-books are prescribed." We believe that our series of elementary Greek and Latin classics will be found useful in High Schools as also our French and German texts, and we hope that the rules of the Department will not prevent you from recommending those of our publications which you approve of, merely on the ground that we do not see our way to part with the copyrights.

We are, dear sir,
Yours faithfully,

MACMILLAN & CO.
Publishers.

TORONTO, 27th April, 1887.

DEAR SIR,—I am directed by the Minister of Education to acknowledge the receipt of your communication of the 10th instant and to state that the subject is under his consideration.

Your obedient servant,

ALEX. MARLING,
Secretary.

To Messrs. MACMILLAN & Co.,
29 and 30 Bedford St.,
London, England.

9 and 13 Tremont Place,
Boston, 10th March, 1887.

Dear Sir,—We desire at this time to remind you of the series of classics for children. The enclosed circular shows you just how the series stands at present, except that we have issued also Harriet Martineau's "The Peasant and the Prince," a story of the French revolution, illustrated. Teachers' and introduction price, in boards 35 cents; cloth, 50 cents. It is not too much to say we feel sure that this enterprise has met with the approval of the entire educational public. So many strong endorsements have been received from superintendents and teachers in all sections of the country that it would be impossible to print them all within reasonable limits, or even to give the names of the writers. The verdict appears to be agreed upon that the aim of the series has been realized so far as could be expected—*choice literature, ample notes, large type, good paper, firm binding and low prices.* At this time, we suppose, you are casting about for additional reading matter. Will you be kind enough to run over this list and select from that if you find anything that meets your wants. We should be happy to send a fuller description of any of the books on application. Stickney's Classic Readers afford interesting supplementary reading for lower grades.

The new National Music Course is now complete.

Very truly yours,

GINN & CO.,
Publishers School and College Text-Books,
Boston, New York and Chicago.

Toronto, 18th March, 1887.

Dear Sir,—I am directed by the Minister of Education to acknowledge the receipt of your communication of the 10th instant, and to state that the subject is under his consideration.

Your obedient servant,

ALEX. MARLING,
Secretary.

To Messrs. Ginn & Co.,
9 and 13 Tremont Place,
Boston, Mass.

Toronto, 19th March, 1887.

My Dear Sir,—I would like to get the copyright of several American and English works which I propose authorizing for use in the Public and High Schools, particularly the latter. Negotiations for this purpose can, in my opinion, be better carried on by a person engaged in the trade than by a member of a Government.

It would not, however, do that one firm should have what might appear to be a monopoly of a privilege of this kind; consequently I propose, with your consent, of course, employing your firm as the agents of the Education Department to open negotiations with those publishers whose books I might desire to authorize, for the purpose of securing copyrights to be held by you in trust for the Department. The conditions of the trust will be that, if you secure such copyright, you will, at my request, transfer such of them as I might order to any other firm or publisher in Ontario named by me. Such reasonable expense as you may incur in connection with these negotiations—my consent, of course, being first had and obtained—will be borne by the Department. Would you kindly let me know whether you are prepared to enter into such an engagement and act in the capacity of agent as above referred to?

Yours truly,

GEO. W. ROSS.
Minister of Education.

Geo. M. Rose, Esq.,
Hunter, Rose & Co., Publishers, etc.,
Toronto.

TORONTO, 21st March, 1887.

Hon. GEO. W. ROSS,
Minister of Education.

DEAR SIR,—In reply to your letter of the 19th instant, received this morning, I beg to say that I am agreeable to enter into the arrangement you suggest about securing copyright of British and American works, and will second your efforts in this direction all in my power.

Yours, etc.,
GEO. MACLEAN ROSE.

EDUCATION DEPARTMENT.
TORONTO, 28th March, 1887.

We, the undersigned firm of Hunter Rose & Co., agree with the Minister of Education to make, at our own costs, such agreements as may be practicable with the publishers of the text-books in the enclosed list for the publication or sale of the same in the Province of Ontario, in trust for the Education Department.

We agree on the request of the Minister of Education, to transfer any of the text-books named in the aforesaid list to any other publisher, if the copyright or right of sale is obtained by us.

We agree that, in all matter affecting the transfer of the said copyrights or interest therein to any other publisher, or to the Education Department, we will be governed by any written request the Minister of Education may make, providing that any expense we have incurred will be reimbursed to us by the said Education Department, but no expenditure beyond the sum of one hundred dollars is to be incurred without the consent of the Education Department. We will also agree to conduct all the correspondence with the firms herein named confidentially on behalf of the Department.

HUNTER ROSE & CO. *(Seal.)*
GEO. W. ROSS. *(Seal.)*

Witness.—HENRY R. ALLEY.

McElroy's, The Structure of English Prose.....A. C. Armstrong, N.Y.
Mackay's Elements of Euclid.....Chambers.
Todhunter's Plane Trigonometry.....McMallin.
Hamblin Smith's " .....Rivington.
Allen & Greenough's Latin Grammar.....Ginn, Heath & Co.
Leighton's First Steps in Latin.....Ginn, Heath & Co.
Aids to writing Latin Prose.....Rivington.
Wilkin's Latin Prose.....Rivington.
Goodwin's Greek Grammar.....Ginn, Heath & Co.
White's First Lessons in Greek.....Ginn, Heath & Co.
Cassell's Lessons in French, Part I.....Cassel's & Co.
MacMillan's Progressive French Course.....MacMillan.
Meissner's Public School German Grammar.....Ginn, Heath & Co.
Stocks' Wartfolze.....Geo. Bell & Sons, London.
Perle's Primer of Philology.....MacMillan.
Papillen's Comparative Philology.....MacMillan.

TORONTO, May 6th, 1887.

DEAR SIR,—We would suggest the following prices for books mentioned below.

The prices are based on purchase of sheets from your publishers, at prices quoted by them. With prices mentioned a discount of 25 per cent. can be allowed the trade, and 10 per cent. extra on quantity to publishers, and a small commission will be left us for our trouble.

McEloroy's Structure English Prose	$1 00
MacKay's Elements of Euclid	75
" " " Book 1, 2, 3,	50
Allen & Greenough's Latin Grammar	1 00
Leighton's First Steps in Latin	1 00
Goodwin's Greek Grammar	1 25
White's First Lesson in Greek	1 00
Meissner's Public School German Grammar	1 25
De Fivas' Grammar of French	75

Yours truly,

ROSE PUBLISHING CO.
D. A. Rose.

Hon. G. W. Ross.
Minister of Education, City.

Education Department.
Toronto, March 24th, 1887.

Gentlemen,—Your attention is called to the fact that your text-book list has higher prices affixed to some of the authorized text-books than last agreed upon with this Department.

A list of the authorized prices is enclosed, and it is required that the retail prices laid down therein be adhered to, or not exceeded by the firms dealing in these books.

Your obedient servant,

ALEX. MARLING.
Secretary.

Messrs. The Canada Publishing Co.
Toronto.

Education Department,
Toronto, March 24th, 1887.

Gentlemen,—Your attention is called to the fact that your 1887 School Book Catalogue has higher retail prices affixed to a few of your own authorized text-books, as well as to those published by other firms.

A list of the prices last agreed to as the authorized ones, is enclosed, and it is required that the prices therein quoted as retail prices be adhered to, or not exceeded in your sales and advertisements.

Your obedient servant,

ALEX. MARLING.
Secretary.

Messrs. The Copp, Clark Co.,
Publishers, Toronto.

Educational Department,
Toronto, March 24th, 1887.

Gentlemen,—Your attention is called to the fact that your 1886 School Book Catalogue has higher retail prices affixed to some of the authorized text-books, than last agreed to with the Department.

A list of the authorized prices is enclosed, and it is required the retail prices therein laid down be adhered to, or at least not exceeded by the firms dealing in these books.

Your obedient servant,
ALEX. MARLING,
Secretary.

Messrs. Warwick & Sons,
Publishers, Toronto.

Education Office,
Toronto, March 24th, 1887.

Gentlemen,—Your attention is called to the fact that your 1887 text-book list has higher prices affixed to several authorized text-books, than was agreed upon with the Department, *e. g.*:

H. Smith's Arithmetic	75c.	instead of	65c.
" Statics	90c.	" "	80c.
Potts' Euclid Bo. I. & II.	40c.	" "	30c.
Beatty & Clares' Book-keeping	70c.	" "	65c.

A list of the authorized retail prices is enclosed, and it is required that your retail prices and advertisements of same agree with the Departmental list, or at any rate, do not exceed the prices therein fixed as the maximum.

Your obedient servant,
ALEX. MARLING.
Secretary.

Messrs. W. J. Gage & Co.,
Publishers, Toronto.

Education Department,
Toronto, 31st March, 1887.

Dear Sir,—The Minister desires me to state in reply to your letter of 26th instant, that he has called the attention of the publishers to the fact that the prices of some of the books, as sold, exceed the price agreed on by them with the Department.

Your obedient servant,

ALEXANDER MARLING,
Secretary.

Mr. T. H. McKee,
Teacher,
Oxley.

Toronto, April 5th 1887.

Alex. Marling, Esq., LL.B.,
Toronto.

Dear Sir,—In reply to your favor of the 4th, *re* price of Hamblin Smith's Statics, Potts' Euclid, Books 1 and 2, and Beatty and Clare's Book-keeping, we would say that we were not aware that there was any failure on our part to carry out our arrangement with the department.

It is quite true that the late Mr. Crooks issued a price list, putting upon said list the prices which you now furnish us as the correct rates. The list was issued on March 18th, 1880, accompanied by a note, as follows: "I am instructed by the Honorable the Minister of Education to enclose for your consideration proposed draft of new regulations as to authorized text-books, with schedule *of proposed maximum retail prices.* The minister would be obliged by your giving it early consideration."

(Signed,) ALEX. MARLING,

We were not aware that any definite arrangement was entered into, and have continued since the publication of the books, to print upon the book, and advertise them at the higher price as indicated in your recent communication. There could, therefore, have been no attempt on our part to charge higher rates than the proper retail prices.

I have the honor to be, Sir,
Your obedient servant,

W. J. GAGE & CO.,

P. S.—Our advertised price of Potts' Euclid, Books 1 and 2, is 30 cents and not 40, as in your favor.

ST. JOHN'S, NEWFOUNDLAND, August 23rd, 1887.

Hon. G. W. Ross,

DEAR SIR,—Accept my grateful thanks for the school books and pamphlet you were so kind as to send me through Mr. Smith, Deputy Minister of Marine, all of which have reached me safely. I have not yet had time to examine them carefully, but even a hasty glance through them has been sufficient to convince me of the superiority of your school books over any I have seen. Your High School Reader, in particular, is an admirable book. "The Scripture Readings" I have carefully looked through, and consider it an invaluable compilation, most skillfully arranged, and admirably adapted to the object in view. It is a solution of the difficult problem of how to use the Bible in the common schools. By the use of such a volume children would acquire a good knowledge of Bible history, and of the moral teachings of the sacred volume in an easy, attractive form. The Bible would not be to children what it is too often made, a repulsive book. I am satisfied that were your "Readings" substituted for the entire volume, both in Sunday and day schools, the gain would be great. It is a great point gained that the book is unobjectionable to Roman Catholics. I shall bring it under the notice of our Superintendents of Education. You are aware we have unfortunately the separate system here, and I fear it will be a long time before we shall see a change. Still, all schools could use the "Readings."

Your report and speeches will enable me to form a complete acquaintance with your system of Education, which I have long been anxious to do. Many thanks for your kindness.

A short time ago I published a text-book of Newfoundland History, a copy of which I send by this mail, and beg you to accept. I succeeded in the difficult task of writing a school history which has been accepted by all denominations, and is now in use in all Protestant and Roman Catholic schools and academies. I also send a small volume which I published last year entitled, "Where are we and Whither Tending." Not knowing your address, I send the parcel to the care of Mr. Smith, who will forward it to you.

I have some idea of writing a school geography of Newfoundland, and should much like to see the one you use. Perhaps you could add to your kindness by sending me a copy. The teaching of geography has undergone a great revolution within a few years.

Do you see the annual reports of our schools, or would they possess any interest for you?

Very truly yours,

M. HARVEY.

TORONTO, 5th September, 1887.

MY DEAR SIR,—I am delighted to learn that the books sent from my Department, through the Deputy Minister of Marine, impressed you so favorably. I have made an effort to improve the typography and illustrations of all our text-books, as well as the technical and literary matter which they contain. In this respect I was anxious that our text-books should compare favorably with those published in the United States and elsewhere. I send you herewith copies of three new books which have just been authorized by my Department, and may possibly send some others in the near future. A new edition of the Scripture Selections will be published shortly, a copy of which I shall endeavor to send you.

I am very much pleased with your History of Newfoundland, and expect in the course of a few days to peruse with equal pleasure the volume of lectures which you were good enough to send me.

Yours truly,

GEO. W. ROSS.

The Rev. M. HARVEY,
St. John's, Newfoundland.

ST. JOHN'S, NEWFOUNDLAND, December 6th, 1887.

MY DEAR SIR,—I have again to thank you for your kindness and liberality in sending me a second supply of your school books, which I duly received. I have now had time to examine them more carefully, and I must say I have seen nothing superior to them. In many respects your series of school books, are, in my humble judgment, superior to any I have met with. You may well feel proud of your admirable system of education. Would that we had anything even distantly resembling it here. The geography you were good enough to send me is an admirable school book. I hope to get an arrangement with the Superintendent of Education, so as to bring out in the course of next year a geography of this land. Of course, I would not bring it out at my own risk.

Again thanking you for your kindness.

Very sincerly yours,

M. HARVEY.

EDUCATION DEPARTMENT,
TORONTO, October 4th, 1887.

GENTLEMEN,—Specimen copies of the following Public and High School text-books having been submitted to the Assistant Queen's Printer for examination, he reports as follows:

Public School Grammar.

The indenture specifies that the sections shall be of only sixteen pages, and that three tapes shall be used. The sections in the sample book submitted are thirty two pages and only two tapes are used.

High School Grammar.

The same objections as in Public School Grammar, the sections being of thirty two pages, instead of sixteen. The book is carelessly fitted into the case, and the margins very irregular, owing, in part, to the largeness of the sections, When the sections are so large, the folding is necessarily uneven, and the leverage and weight too much for the stitches at back of book to hold.

Public School Arithmetic.

See Public School Grammar. The same statements made there apply also to this book. The faults are the same.

The Elements of Algebra.

Sections of thirty two pages, instead of sixteen as indenture calls for. Each large thirty-two page section only sewed with three single wire stiches, instead of sixteen page sections and six wire stitches to each, as is customary with books bound in this style. The books would probably soon fall to pieces.

Composition and Practical English.

Bound in same style as Public School Grammar and Public School Arithmetic and same objections apply.

The Verbalist.

Very badly put together. If the style of sewing is used there should be three tapes or strings. Another sample copy has been sent to me by publishers, sewed with wire on two broad tapes; this is better, only the sections are thirty-two pages, indenture specifies sixteen. When the Smyth sewing machine is used, as it is in this book, three tapes or strings should always be used. Price not on cover.

The Orthoëpist.

Badly bound. Sections thirty-two pages; contrary to conditions specified by indenture. Margin very irregular owing to careless folding and the largeness of the sections. The whole get-up of the book contrary to general terms of indenture.

High School Geography and Public School Geography.

Two tapes used instead of three, as specification by indenture calls for. As the books are large and sections have maps pasted on them it is important that three tapes be used. Cloth used for back of books should be heavier. Double maps not pasted on guards.

An edition of each book having been prepared prior to authorization, permission is hereby granted for the disposal of such books as are already bound; but all unbound sheets and the next and subsequent editions of each book are required to be improved as noted in the foregoing report, and to be in strict accordance with the terms of the indenture.

Your obedient servant,

ALEX. MARLING,
Secretary.

The Canada Publishing Co.,
Toronto.

Education Department,
Toronto, October 11th, 1887.

Gentlemen,—Specimen copies of the following High School text-books have been examined by the Assistant Queen's Printer who reports upon them as follows:—

I have carefully examined into the workmanship and material used in the manufacture of the following High School books, comparing them with the specifications contained in agreement dated 4th July, 1887: High School Word Book, High School Chemistry, High School Book-Keeping, High School German Reader, and German Reader by Grimm.

High School Chemistry.

The end papers are not separate from sections, but joined to both the first and last, contrary to specifications laid down in agreement. Tapes are not used, and each section only stitched with three small wire stitches to fine mull, which is not sufficiently strong of itself to hold. Binding not so strong as demanded from and supplied by other publishers.

Two broad, strongly made tapes, one inch each wide, should be used as well as the mull and piece of strong paper or pressings. Books bound as per sample would prove unsatisfactory to both the Department and the Publishers.

High School Book-Keeping.

As the pages of the book are larger than ordinary it is important that two or three tapes be used. Same objections as to end papers as in High School Chemistry, and the same general remarks made with reference to that book apply to this one also.

High School English Word Book.

See High School Chemistry, same objections apply as made there.

High School German Reader.

End pages separate and therefore satisfactory; but only three wire stitches to each section and no tape, and, therefore, unsatisfactory.

German Reader by Grimm.

Sections sewed with only three wire stitches without tapes, and not strongly enough bound for school books.

The Minister of Education directs me to say that permission is hereby given for the sale of such of these books as are already bound, but all sheets unbound and future editions must conform to the requirements above indicated.

Your obedient servant,

ALEX. MARLING,
Secretary.

The Copp, Clark Co. (Limited),
9 Front St. West,
Toronto.

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3 Tremont Place,
Boston, Mass., 5th December, 1887.

Geo. W. Ross,
Minister of Education,
Toronto, Canada.

Dear Sir,—We take pleasure in sending with this, two little books recently published by us (Hyde's Practical Lessons in English and Wright's Nature Reader No. 1) for your inspection, with a view to authorization. The second volume of Miss Hyde's series will be ready in a few months and will complete the series, being intended to cover Grammar School work. The second volume of Mrs. Wright's series will be ready soon.

Respectfully yours,

D. C. HEATH & CO.,
Publishers and Importers of Text-Books for Schools and Colleges.

TORONTO, 19th December, 1887.

SIR,—Please return our copies of agreement *re* school books, signed in duplicate and promised us last August.

We wish to issue new editions of several books in time for the opening of schools after Christmas holidays, and in order to manufacture them strictly in accordance with said agreements we must have the particulars before us.

We have asked Mr. Wilkinson for our copies of these agreements several times, but have not as yet been able to get them.

Your obedient servants,

For THE CANADA PUBLISHING COMPANY (LIMITED).
B.

Hon. GEO. W. ROSS.
Minister of Education, City.

Received December 24th the following indentures:—

Re Public School Grammar
" " Arithmetic.
" " Geography.
" " Music Reader.
High School " "
" " Grammar.
" " Geography.
Ayer's Verbalist.
" Orthoëpist.
Williams' Composition.
McLellan's Elements of Algebra.

Received the above from Mr. Wilkinson.

S. G. BEATTY.

COR. RICHMOND AND VICTORIA STREETS,
TORONTO, February 17th, 1888.

Hon. GEO. W. ROSS,
Minister of Education.

DEAR SIR,—Our Company is in a position to effectively carry on the work of book production and publishing, and we shall be much obliged if you will kindly permit us to compete with other firms for the work of getting up the different school text-books authorized by your department.

I have etc.,

F. S. SPENCE,
Manager Citizen Publishing Co.

TORONTO, 21st February, 1888.

MY DEAR SIR,—I am just now arranging for an arbitration respecting the production and publication of text-books. It would be, perhaps, better for your application to stand over till this matter is disposed of.

Yours truly,

GEO. W. ROSS.

F. S. SPENCE, Esq.,
Manager Citizen Publishing Co., Toronto.

RETURN

To an Order of the Legislative Assembly, dated 15th March, 1888 :—

Ordered, That there be laid before this House a Return showing the location of each Mechanics' Institute, Farmers' Institute and Free Library in the Province, with the number of subscribers or members of each, and the amount of money annually expended by the Province and the Institutes respectively for their support. Also, the number of School Boards that during the last five years preceding the withdrawal of Government Grant for purchase of libraries made application to have sums voted for the purchase of books for school libraries supplemented by Education Department with the amount of money thus annually expended by the Legislature during period named. Also, copies of all correspondence between the Education Department and Trustees of several School Boards or other persons respecting the question of aid in purchasing libraries since the withdrawal of such aid.

By Command,

A. S. HARDY,
Secretary.

Provincial Secretary's Office,
Toronto, March 15th, 1888.

Mr. Wood (Brant).

MEMO. FROM THE EDUCATION DEPARTMENT.

It may be noticed that the Free Public Library system of Ontario, which was chiefly used by school children had been practically abandoned during the past five years preceding the withdrawal of the Government grant. The average number of libraries purchased annually during that time was only sixty-nine, with an average outlay by local supporters of $1,190.50 per annum. There is no correspondence in the Department regarding the matter other than the formal applications for grants of money.

The returns from Mechanics' Institutes and Free Libraries received for the year 1887, show that the local supporters of 143 Institutes raised the large sum of $88,547.22, more than three and a-half times as much as had been apportioned to them from the Legislative grant, and about eighty times as much as was raised by local efforts for School Libraries previous to the closing of the Depository.

I.—Mechanics' Institutes and Free Libraries for the year 1887.

Location.		Number of Members or Subscribers.	Amounts paid from Legislative Grant for 1886-7.	Amounts raised locally by Institutes for 1886-7.
Counties and Districts.	Cities, Towns and Villages.		$ c.	$ c.
Addington	Newburgh	(new) no report.		
Algoma	Manitowaning	no report.		
do	Thunder Bay	no report.		
Brant	Brantford	1,877	326 00	1,958 81
do	Paris	254	250 00	818 68
do	St. George	73	241 00	303 74
Bruce	Holyrood	(new) no report.		
do	Kincardine	167	235 67	224 97
do	Paisley	111	149 29	223 53
do	Port Elgin	82	69 00	123 41
do	Ripley	(new) no report.		
do	Southampton	105	150 00	270 07
do	Teeswater	50	102 00	121 81
do	Walkerton	13	*nil.*	18 43
do	Wiarton	no report.		
Dufferin	Orangeville	120	58 76	131 94
do	Shelburne	111	150 00	208 30
Dundas	Iroquois	36	55 82	34 18
Durham	Bowmanville	74	138 31	140 95
do	Port Hope	154	250 00	447 34
Elgin	Aylmer	160	224 40	220 44
do	St. Thomas	1,200	200 00	1,653 21
Essex	Essex Centre	42	191 67	106 93
Frontenac	Garden Island	122	262 00	590 58
do	Kingston	349	350 00	1,126 80
Glengarry	Lancaster	97	*nil.*	367 75
do	Williamstown	172	150 00	344 75
Grenville	Kemptville	no report.		
do	Merrickville	60	90 48	32 91
do	Prescott	100	200 00	136 39
Grey	Clarksburg	13	*nil.*	9 13
do	Durham	75	158 00	132 43
do	Hanover	(new) no report.		
do	Markdale	(new) no report.		
do	Meaford	107	57 00	199 41
do	Owen Sound	238	275 00	502 72
Haldimand	Caledonia	59	175 00	39 65
do	Dunnville	62	*nil.*	87 00
Halton	Georgetown	116	237 00	144 67
do	Milton	111	280 00	162 46
do	Oakville	51	175 00	35 78
Hastings	Belleville	243	250 00	1,211 35
do	Deseronto	54	75 00	128 12
do	Trenton	80	250 00	359 95
Huron	Blyth	21	*nil.*	63 50
do	Brussels	54	175 00	79 70
do	Clinton	221	237 50	442 36
do	Exeter	77	46 88	125 05
do	Goderich	102	250 00	499 45
do	Seaforth	401	339 00	1,140 06
do	Wingham	102	250 00	760 61
do	Wroxeter	56	118 00	95 39
Kent	Blenheim	(new) no report.		
do	Chatham	273	234 00	678 26
do	Dresden	51	172 45	217 72
do	Highgate	(new) no report.		
do	Ridgetown	51	250 00	274 50
do	Thamesville	(new) no report.		
Lambton	Arkona	120	270 40	88 07
do	Forest	no report.		
do	Petrolea	25	60 00	54 57
do	Point Edward	136	100 00	244 88
do	Sarnia	no report.		
do	Watford	no report.		
do	Wyoming	108	55 60	97 40

I.—Mechanics' Institutes and Free Libraries, etc.—*Continued.*

Location.		Number of Members or Subscribers.	Amounts paid from Legislative Grant for 1886-7.	Amounts raised locally by Institutes for 1886-7.
Counties and Districts.	Cities, Towns and Villages.		$ c.	$ c.
Lanark	Almonte	116	100 00	202 89
do	Carleton Place	206	115 00	869 66
do	Perth	137	331 00	301 32
do	Smith's Falls	205	250 00	314 28
Leeds	Brockville	250	250 00	331 28
Lennox	Napanee	161	250 00	421 33
Lincoln	Beamsville	125	50 00	171 10
do	Grimsby	112	264 50	241 22
do	Merritton	3	*nil.*	48 36
do	Niagara	53	73 00	104 16
do	St. Catharines	345	278 00	623 09
Middlesex	Ailsa Craig	81	110 50	188 21
do	Belmont	100	197 00	110 50
do	Glencoe	no report.		
do	London	364	136 00	2,972 94
do	Lucan	60	187 63	57 72
do	Melbourne	(new) no report.		
do	Parkhill	111	50 00	69 07
do	Strathroy	359	250 00	518 30
do	Thorndale	54	25 00	41 68
do	Wardsville	15	*nil.*	29 48
Muskoka	Bracebridge	55	175 00	175 44
do	Gravenhurst	32	21 00	47 00
do	Port Carling	(new) no report.		
do	Windermere	104	170 00	263 60
Norfolk	Simcoe	248	208 22	685 15
do	Waterford	53	86 00	81 90
Northumberland	Brighton	105	125 00	176 50
do	Campbellford	76	225 00	295 14
do	Cobourg	122	*nil.*	48 75
do	Colborne	56	119 00	104 70
do	Hastings	103	103 00	114 17
Ontario	Columbus	no report.		
do	Oshawa	(new) no report.		
do	Port Perry	35	*nil.*	24 56
do	Uxbridge	182	250 00	574 44
do	Whitby	105	175 48	220 57
Oxford	Embro	85	183 58	99 42
do	Ingersoll	100	148 10	290 65
do	Norwich	84	200 00	142 49
do	Tilsonburg	102	98 50	134 25
do	Woodstock	315	232 38	583 12
Parry Sound	Parry Sound	101	50 00	90 00
Peel	Alton	51	175 00	121 43
do	Belfountain	(new) no report.		
do	Bolton	63	66 00	48 02
do	Brampton	221	250 00	347 25
do	Caledon	50	60 89	31 82
do	Cheltenham	55	226 00	74 50
do	Claude	59	76 00	45 57
do	Forks of Credit	(new) no report.		
do	Mono Road	48	174 62	48 00
do	Streetsville	105	96 55	69 44
Perth	Listowel	no report.		
do	Mitchell	166	211 50	285 97
do	St. Marys	161	308 00	376 30
do	Stratford	105	200 00	371 38
Peterborough	Norwood	50	80 40	103 99
do	Peterborough	336	286 00	612 33
Renfrew	Arnprior	115	250 00	175 04
do	Renfrew	94	150 00	176 40
Russell	Russell	(new) no report.		
Simcoe	Barrie	290	243 00	662 03
do	Beeton	53	105 36	118 10
do	Bradford	no report.		

I.—Mechanics' Institutes and Free Libraries, etc.—*Continued.*

Location.		Number of Members or Subscribers.	Amounts paid from Legislative Grant for 1886-7.	Amounts raised locally by Institutes for 1886-7.
Counties and Districts.	Cities, Towns and Villages.		$ c.	$ c.
Simcoe	Collingwood	126	194 60	414 48
do	Midland	115	236 00	212 85
do	Orillia	217	259 30	379 43
do	Penetanguishene	127	320 00	351 46
Victoria	Bobcaygeon	(new) no report.		
do	Fenelon Falls	109	100 00	264 45
do	Lindsay	131	250 00	507 09
Waterloo	Ayr	134	250 00	157 37
do	Berlin	285	200 00	540 96
do	Elmira	(new) no report.		
do	Galt	345	280 35	524 15
do	Hespeler	49	109 45	244 73
do	New Hamburg	51	25 00	59 94
do	Preston	102	227 00	316 56
do	Waterloo	116	289 00	404 53
Welland	Niagara Falls	184	250 00	465 80
do	Niagara Falls South	105	252 00	213 07
do	Port Colborne	25	*nil.*	*nil.*
do	Thorold	137	50 62	132 97
do	Welland	96	218 70	241 46
Wellington	Arthur	105	294 00	156 06
do	Clifford	50	43 00	49 50
do	Drayton	130	235 75	231 35
do	Elora	154	269 91	179 72
do	Ennotville (Barnett)	51	125 00	87 80
do	Fergus	120	301 00	332 25
do	Guelph	1,051	200 00	1,353 31
do	Harriston	125	88 00	198 06
do	Mount Forest	124	212 43	118 98
do	Palmerston	no report.		
Wentworth	Dundas	182	208 67	802 48
do	Waterdown	14	*nil.*	82 82
York	Aurora	134	122 59	345 17
do	Markham	60	*nil.*	217 99
do	Newmarket	50	25 00	167 14
do	Parkdale	106	246 00	430 01
do	Richmond Hill	53	57 33	68 41
do	Scarboro'	59	223 00	83 42
do	Schomberg	25	30 00	50 00
do	Stouffville	107	250 00	178 68
do	Toronto	14,445	200 00	43,763 02
do	Weston	102	331 75	242 71
do	West Toronto Junction	(new) no report.		
do	Woodbridge	16	73 00	60 92
Totals		35,195	23,830 89	88,547 22

1876.

Free Public Libraries supplied by the Education Department during the year 1876.

Libraries Supplied.	Number	Value of Books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	20	1023 30	511 65	511 65
Rural school sections	71	3943 20	1971 60	1971 60
Total	91	4966 50	2483 25	2483 25

Free Public Libraries supplied by booksellers under Departmental regulations during the year 1876.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	2	51 22	25 61	25 61
Rural school sections	3	107 88	53 94	53 94
Total	5	159 10	79 55	79 55

1877.

Free Public Libraries suppled by the Education Department during the year 1877.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	24	1247 86	623 93	623 93
Rural school sections	59	2326 22	1163 11	1163 11
Total	83	3574 08	1787 04	1787 04

Free Public Libraries supplied by booksellers under Departmental regulations during the year 1877.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	2	44 66	22 33	22 33
Rural school sections	1	101 70	50 85	50 85
Total	3	146 36	73 18	73 18

1878.

Free Public Libraries supplied by the Education Department during the year 1878.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	15	977 40	488 70	488 70
Rural school sections	54	2248 98	1124 49	1124 49
Total	69	3226 38	1613 19	1613 19

Free Public Libraries supplied by booksellers under Departmental regulations during the year 1878.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	3	117 08	58 54	58 54
Rural school sections	5	285 88	142 94	142 94
Total	8	402 96	201 48	201 48

1879.

Free Public Libraries supplied by the Education Department during the year 1879.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	16	633 02	316 51	316 51
Rural school sections	30	1016 60	508 30	508 30
Total	46	1649 62	824 81	824 81

Free Public Libraries supplied by booksellers under Departmental regulations during the year 1879.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	2	162 12	81 06	81 06
Rural school sections	5	221 00	110 50	110 50
Total	7	383 12	191 56	191 56

1880.

Free Public Libraries supplied by the Education Department during the year 1880.

(Only 33⅓ per cent. allowed this year.)

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	4	166 32	124 74	41 58
Rural school sections	15	497 08	372 81	124 27
Total	19	663 40	495 55	165 85

Free Public Libraries supplied by booksellers under Departmental regulations during the year 1880.

Libraries Supplied.	Number	Value of books.	Local Appropriation.	Legislative Grant.
		$ c.	$ c.	$ c.
Cities, towns and villages	4	482 94	322 23	160 71
Rural school sections	10	284 96	189 98	94 98
Total	14	767 90	512 21	255 69

Farmers' Institutes in Ontario, Secretaries and Post Office Addresses.

Farmers' Institutes.	Secretaries.	Post Office.
Brant, North	Hen. R. Nixon	St. George.
Brant, South	Thos. A. Good	Brantford.
Dundas	W. A. Whitney	Iroquois.
Elgin	J. C. Dance	Kingsmill.
Elgin, West	Daniel Black	Iona Station.
Essex, South	D. W. Canfield	Kingsville.
Glengarry	W. J. McNaughton	Lancaster.
Grey, Centre	A. Turner	Markdale.
Grey, North	Thos. Gordon	Owen Sound.
Grey, South	Wm. Irvine	Lamlash.
Halton	Wm. Clements	Milton.
Huron, East	Wm. Bishop	Brussels.
Huron, South	Robt. McMordie	Kippen.
Kent, East	A. J. Campbell	Thamesville.
Kent, West	E. S. Dyke	North Buxton.
Lambton, East	Jos. Osborne	Wyoming.
Lanark, North	John Steele	Bennie's Corners.
Lanark, South	Geo. Oliver	Perth.
Leeds, South	Freeman Britton	Gananoque.
Lennox	W. M. Dollar	Napanee.
Lincoln	Roland W. Gregory	St. Catharines.
Middlesex, East	Thos. B. Scott	Vanneck.
Norfolk, North	F. L. Culver	Waterford.
Norfolk, South	H. Glazebrook	Simcoe.
Northumberland, East	J. O. Proctor	Dundonald.
Northumberland, West	R. Cullis	Camborne.
Ontario, North	Geo. B. Miller	Uxbridge.
Ontario, South	Jno. A. Carswell	Oshawa.
Peel	J. Pickering	Brampton.
Prince Edward	Samuel N. Smith	Demorestville.
Renfrew, South	Geo. MacIntyre	Renfrew.
Simcoe, South	Rev. J. Carswell	Bond Head.
Simcoe, West	W. A. Furlong	Nottawa.
Victoria, East	Wm. Thurston	Bobcaygeon.
Victoria, South	Jas. Keith	Lindsay.
Victoria, West	Jas. Keith	Lindsay.
Waterloo, South	W. Cowan	Galt.
Wellington, South	W. J. Cockburn	Aberfoyle.
Wellington, West	W. H. Stubbs	Drayton.
York, East	Alex. McCowan	Danforth.
York, North	R. W. Phillips	Newmarket.

(No. 77).

Return of the Writ of Supersedeas issued for the removal of James Goulbourne, Esquire, from the Commission of the Peace for the County of Peterborough. Also, copies of all petitions or other applications for his removal, and copies of all correspondence with reference to such petitions or applications or the said removal. Also, copies of all reports to the Executive Council or His Honour the Lieutenant-Governor, with reference to the said matters, or any of them. (*Not printed.*)

(No. 78.)

Copy of an Order in Council commuting the fees payable to His Honour Judge Lazier under the Surrogate Courts Act. (*Not printed.*)

(No. 79.)

Return of copies of all correspondence and papers in any way relating to the removal of Mr. B. B. Miller, of Wiarton, from the offices of the Clerk of the Division Court, Issuer of Marriage Licenses, and from the Commission of the Peace. (*Not printed.*)

(No. 80.)

Return shewing the Counties in Ontario that offer a bounty for the destruction of Wolves; the amount offered and the amount paid in each year by such Counties since 1880. (*Not printed.*)

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO,

1887.

PARTS I, II AND III.

Printed by Order of the Legislative Assembly.

TORONTO:
PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.
1888.

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SIXTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

To the Honorable Charles Drury, Minister of Agriculture:

Sir,—I have the honor to submit herewith Parts I, II and III of the sixth annual report of the Bureau of Industries for the Province of Ontario, consisting of—

I. The Weather and the Crops;
II. Live Stock, the Dairy and the Apiary, and
III. Values, Rents and Farm Wages.

I have the honor to be, Sir,
Your obedient servant,

A. BLUE, Secretary.

PART I.

THE WEATHER AND THE CROPS.

THE WEATHER.

Although the seasons continue in their courses with unfailing regularity, yet the character and length of each particular season is varying, each possessing some characteristic peculiar to its year. A study of the precipitation of rain and snow and the prevalence of sunshine and general warmth is of interest on account of their influence upon the product of the field—heat, moisture and light being the three great essentials of vegetation apart from the matter of soil and tillage.

TEMPERATURE.—The condition of chief importance in its relation to plant life is unquestionably that of temperature during the season of growth and maturity. The following table is made up from the record of ten stations, including such geographical extremes as Windsor, Barrie and Pembroke :

Months.		Windsor.	Goderich.	Simcoe.	Stratford.	Hamilton.	Toronto.	Barrie.	Peterboro'.	Cornwall.	Pembroke.	Province averages.
		°	°	°	°	°	°	°	°	°	°	°
April ..	1887	44.5	39.6	42.4	39.1	42.8	39.4	38.0	39.0	37.2	35.5	39.8
	1882-7	45.2	40.5	42.7	40.4	42.4	40.2	38.7	41.1	39.3	37.1	40.8
May ..	1887	63.8	60.9	62.3	62.2	60.0	58.5	61.0	63.3	62.7	62.1	61.7
	1882-7	57.0	53.3	55.1	53.6	53.9	52.1	53.0	55.7	55.0	53.9	54.3
June ..	1887	69.3	64.7	66.1	65.8	66.0	63.9	62.8	68.8	66.9	67.1	66.1
	1882-7	67.5	63.3	64.5	63.6	64.5	62.4	62.8	65.9	64.7	64.1	64.3
July ...	1887	77.0	71.7	74.5	74.1	75.6	73.1	74.2	76.5	74.6	72.5	74.4
	1882-7	72.4	67.4	69.6	67.2	70.4	67.5	68.5	70.2	68.3	68.4	69.0
August.	1887	69.1	64.4	67.1	64.4	68.3	66.2	67.7	69.0	66.6	64.5	66.7
	1882-7	68.7	65.2	66.5	63.8	68.1	65.3	65.7	67.0	66.7	65.4	66.2
Sept'r..	1887	60.2	56.8	57.5	55.0	58.2	56.4	57.6	58.3	56.8	54.1	57.1
	1882-7	63.3	60.0	59.9	57.5	61.2	58.5	58.5	59.1	57.5	56.4	59.2
Av. for 6 m'ths.	1887	64.0	59.7	61.6	60.1	61.7	59.6	60.2	62.5	60.8	59.3	61.0
	1882-7	62.3	58.3	59.7	57.7	60.1	57.7	57.9	59.8	58.6	57.5	59.0

The temperature for the six months averaged 2° higher than for the same period in 1882-7, notwithstanding that April was lower in temperature in 1887 than the average. The month of May was 7.40° higher in 1887 than the average of the same month in the six years, June was nearly 2° above its average, and July was 5.4° higher than its average record. This accounts for the unusually early harvest, the growth being forced at so rapid a rate that some correspondents report the fall wheat as having ripened and been cut as early as the first of July. August showed slightly higher than an average temperature, while September, like the first month of the six, fell below its average for the six years period. July was the hottest month, the thermometer averaging 74.4°, and August came next with 66.7°. Windsor averaged 64° for the six months, while Cornwall, Toronto and Goderich were each below 60°.

PRECIPITATION.—Fall wheat is still the most important cereal crop of the province, and it is especially affected by the conditions of the weather in that critical period between the ceasing of growth in the one year and the starting of vegetation in the following year. An even covering of snow in the winter, undisturbed by heavy thaws which would expose the young plants to keen winds and frosts, is always certain to bring the fall wheat out in the spring in as good condition as it entered the winter; provided, of course, that the depth of snow is not sufficient to result in the "smothering" of the fields. In short, winter killing may be regarded as the bane of the fall wheat crop. The following table gives the rainfall and snowfall of the province by districts for the five months usually marked by snow and a more or less wintry aspect in our climate, together with the average of each for the six years 1882-7*:

Months.		West and South-west.		North-west and North.		Centre.		East and North-east.		Province averages.	
		Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
		Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
November..	1886	2.31	7.9	1.93	16.0	2.26	6.6	1.77	14.3	2.07	11.2
	1882-6	2.15	7.3	2.10	15.6	1.95	5.8	1.75	10.5	1.99	9.8
December..	1886	0.70	26.2	0.29	22.0	0.49	16.1	0.53	15.6	0.50	20.0
	1882-6	1.07	18.9	0.98	26.8	1.04	14.6	0.86	18.5	0.99	19.7
January....	1887	1.08	26.6	1.72	29.3	1.00	23.0	1.52	27.0	1.33	26.5
	1882-7	1.06	19.1	1.14	32.4	1.13	20.1	0.93	25.1	1.06	24.2
February...	1887	4.01	10.2	1.23	28.2	2 50	20.1	1.26	29.6	2.25	22.0
	1882-7	1.97	11.7	0.83	22.7	1.50	12.3	0.84	19.2	1.28	16.5
March	1887	0.85	6.4	0.12	11.1	0.60	7.3	0.50	15.6	0.52	10.1
	1882-7	1.31	11.4	0.95	14.2	1.17	10.4	0.92	16.0	1.09	13.0
Totals	1887	8.95	77.3	5.29	106.6	6.85	73.1	5.58	102.1	6.67	89.8
	1882-7	7.56	68.4	6.00	111.7	6.79	63.2	5.30	89.3	6.41	83.2

Taking the province as a whole, there was an increase in the precipitation of both rain and snow in the winter months of 1886-7 compared with the average of the same period in 1882-7, and in each of the districts, except the north-west and north, a like record was made. During the last three months the total fall of rain and snow, reckoning an inch of rain as the equivalent of ten inches of snow, was below that of the corresponding three months of 1886, but greater than that of the three months of the five years period 1882-6. The lowest record of rainfall was in December, being ·50 inch, and, strange to say, the second lowest was in March, the last month of the season, when only ·52 inch of rain fell. February was the wettest month, the rainfall being 2.25 inches. The greatest precipitation of snow occurred in January, when 26.5 inches were marked. This was 2.3 inches more than the average of that month in the six years 1882-7, but less by ·8 inch than in 1886. The greatest rainfall by districts was experienced in the west and south-west district, and the least in the north-west and north. The snowfall, however, was greatest in the latter district. In the matter of total precipitation, the first named district shows the highest figures.

Weather records, however, have their greatest value to the agriculturist in so far as they relate to the period of growth and maturity of the crops; and, if we except roots and some of the later varieties of orchard fruits, nearly all the products of the field and garden start their growth and ripen between the beginning of April and the end of Sep-

* The weather districts as given in the table are those of the Meteorological Office. The Centre is a circular district whose centre is a point in Lake Ontario about midway between Toronto and the mouth of the Niagara river, and embracing the counties of Welland, Lincoln, Wentworth, Halton, Peel, and portions of York, Ontario and Durham. A line drawn from the circumference of the circle through Guelph to Goderich is the limit between the West and South-west and the North-west and North districts, and a line from lake Scugog to Rockliffe, on the Ottawa river, is the limit between the North-west and North and the East and North-east districts.

tember. It will be seen from the following table that the growing season of 1887 was exceedingly dry:

Months.	West and South-west.		North-west and North.		Centre.		East and North-east.		Province averages.	
	1887.	1882-7.	1887.	1882-7.	1887.	1882-7.	1887.	1882-7.	1887.	1882-7.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
April	1.48	2.06	1.94	1.78	1.66	1.95	1.93	1.98	1.75	1.94
May	1.92	3.26	1.34	2.53	1.41	2.74	1.11	2.57	1.45	2.78
June	2.83	3.25	2.14	2.96	2.21	2.94	1.95	2.83	2.28	2.99
July	1.19	2.77	3.27	2.56	1.26	2.47	2.02	3.06	1.93	2.71
August....	2.06	3.02	1.05	2.49	1.11	2.38	1.34	2.43	1.39	2.58
September.	1.76	2.51	1.45	3.12	1.26	2.57	0.95	2.62	1.36	2.71
Totals....	11.24	16.87	11.19	15.44	8.91	15.05	9.30	15.49	10.16	15.71

The precipitation of rain for these six months was not quite two-thirds of the usual rainfall, being only 10.16 inches, while in 1886 it was 15.83 inches; the average for the five years 1882-6 was 16.81, and for the six years 1882-7, 15.71 inches. The driest month of the six was September, and there were four months of the period when the rainfall was less than that of the driest month of the previous year. During each month the fall of rain was less than the average for the same month in the six months period, and also smaller than in the corresponding month in 1886. The drouth appeared to prevail to the greatest extent in the eastern half of the province, the centre district being the least favored with rain. In the other half of the province the local showers peculiar to the peninsula formed by the great lakes raised the record to an average of 2.11 inches higher than that of the two districts forming the eastern half. During the months of July and August, the period of harvest, there was but little rain, and as a consequence the crops were saved with scarcely any damage.

Sunshine.—The record of sunshine is given in the table below for the five years 1883-7, except in the case of Toronto and Woodstock, where the returns are for six years. For the the first three years of the five, however, the Niagara peninsula station was located at St. Catharines, after which it was removed to Niagara Falls South.

Months.		Windsor.	Woodstock.	Stratford.	Niagara Falls South.	Toronto.	Barrie.	Lindsay.	Kingston.	Cornwall.	Pembroke.	Province averages.
		Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.	Hrs.
April..	1887..	189.8	176.7	149.3	171.6	178.0	125.5	191.6	211.3	171.3	223.0	178.8
	1883-7	184.7	192.8	164.7	152.1	186.6	154.6	198.7	185.0	199.4	173.3	179.2
May...	1887..	240.5	263.2	274.5	272.8	290.7	253.1	284.7	260.7	241.8	337.8	272.0
	1883-7	219.7	210.1	200.6	210.1	234.7	212.1	236.1	224.2	227.6	209.9	218.5
June..	1887..	253.4	238.8	242.2	230.7	232.4	217.5	235.2	243.9	240.1	259.7	239.4
	1883-7	255.6	245.9	243.7	246.9	272.2	238.0	265.5	244.1	247.9	218.9	247.8
July ..	1887..	334.6	300.6	336.2	286.1	310.0	280.6	305.2	295.5	271.4	233.5	295.3
	1883-7	281.6	263.3	276.2	255.4	285.9	255.9	279.3	254.6	254.6	224.8	263.2
Aug...	1887..	229.0	236.6	242.5	277.0	267.1	188.9	251.1	282.3	259.7	277.7	251.2
	1883-7	234.8	224.7	240.4	245.6	255.9	208.1	239.7	256.5	251.1	227.8	238.5
Sept...	1887..	148.3	177.0	169.7	167.8	190.4	138.1	167.2	172.9	136.8	212.4	168.1
	1883-7	180.9	196.3	170.0	185.6	211.8	153.7	205.2	201.9	187.0	165.3	185.8
Totals.	1887..	1,395.6	1,392.9	1,414.4	1,406.0	1,468.6	1,203.7	1,435.0	1,466.6	1,321.1	1,544.1	1,404.8
	1883-7	1,357.3	1,333.1	1,295.6	1,295.7	1,447.1	1,222.4	1,424.5	1,366.3	1,367.6	1,220.0	1,333.0

There were 2,614.9 hours of possible sunshine (calculated for the latitude of Toronto) in the six months given above, but the actual sunshine recorded as the mean of the province was only 1,404.8 hours, or about 53.7 per cent. of the possible.* This, however, was higher than that of the province for the previous year by 79.4 hours, and above that of the five years 1883-7 by 71.8 hours. The April record of 1887 was slightly below its average for the five years, but May showed an increase of 53.5 hours over that of the same month in the years 1883-7. June fell below its average for the five years by 8.4 hours, but July and August, which are pre-eminently the ripening months of the grain crops, were each considerably higher than their average for the same term of years. September's record was 17.7 hours below the average of the same month in the years 1883-7. July led the record for sunshine with 295.3 hours, May came next with 272.0 hours, and August was third with 251.2 hours. Sunshine appears to have prevailed to the greatest extent at Pembroke, where 1,544.1 hours, or 139.3 more than the average of the province, were registered for the six months. Toronto came next with 1,468.6 hours, while the lowest record of sunshine was made at Barrie, where only 1,203.7 hours were observed, or 201.1 hours less than the mean of the province for the six months.

FARM LANDS OF THE PROVINCE.

The table of Rural Area presents by county municipalities the areas of farm lands in the province in 1887, based on returns made by assessors. These areas are classified as resident and non-resident and give the extent of cleared land, wood land and swamp, marsh and waste land in each county. In the following table the areas are given by groups of counties, together with the totals of the province for five successive years :

Districts.	Acres Assessed.			Acres cleared.	Acres wood land	Acres swamp, marsh or waste.	Per cent. cleared.
	Resident.	Non-Resident.	Total.				
Lake Erie.....	2,265,271	75,169	2,340,440	1,313,365	905,773	121,302	56.1*
Lake Huron.....	2,169,651	106,730	2,276,381	1,207,861	890,069	178,451	53.1
Georgian Bay....	1,923,330	97,465	2,020,795	990,349	855,486	174,960	49.0
West Midland...	3,216,381	40,199	3,256,580	2,215,649	739,661	301,270	68.0
Lake Ontario....	3,010,662	41,865	3,052,527	2,266,314	557,435	228,778	74.2
St. Law. & Ottawa	4,926,161	270,351	5,196,512	2,208,925	2,225,777	761,810	42.5
East Midland ...	2,458,038	157,411	2,615,449	796,668	1,541,849	276,932	30.5
North'n Districts.	904,727	135,606	1,040,333	109,227	822,733	108,373	10.5
The Province 1887..	20,874,221	924,796	21,799,017	11,108,358	8,538,783	2,151,876	51.0
The Province 1886..	20,861,552	897,243	21,758,795	10,938,471	9,676,686	2,143,638	50.3
The Province 1885..	20,671,554	1,103,745	21,775,299	10,856,283	8,883,004	2,036,012	49.9
The Province 1884..	20,567,632	1,144,684	21,712,316	10,736,086	8,914,719	2,061,511	49.4
The Province 1883..	.....	.....	21,458,067	10,539,557	8,825,337	2,093,173	49.1

In what are described as the Northern districts there are a number of unorganized townships having no form of municipal government, from which returns have not been received, and the number of acres given in the above table is computed to be only one-half of the occupied land of the group. In the totals for the province, it will be observed that in 1887 there was an increase of 40,222 acres in the area of assessed land, although the proportion of increase has been greater in the case of non-resident than of resident land.

* The hours of sun above horizon in April was 406.4 ; in May, 461.1 ; in June, 465.7 ; in July, 470.9 ; in August, 434.5, and in September, 376.3.

This latter fact, however, appears to be peculiar to 1887, for in the three preceding years there was a steady decrease in the acreage of non-resident land and a corresponding increase in the list of resident land. It will be noticed also that in every year there has been an increase in the percentage of acres of cleared land. The greatest percentage of increase in this respect was in the Georgian Bay group, where the advance reached 1.3 acres per 100, while the least was in the East Midland counties, where the increase was only .2 per 100 acres. For the province, the percentage of increase of cleared land in 1887 over 1886 was .7, and during the four years since 1883 the increase amounted to 1.9 acres per 100 cleared. In the western half of the province during the past year there was a marked decrease in the number of acres of marsh, swamp and waste lands, while the reverse appears to have been the case in the four groups to the eastward, and for the whole province a slight increase has been recorded in the acreage of those lands. A steady decrease since 1884 has occurred in the number of acres of woodland.

Area in Crops.—The following table shows the number of acres under staple field crops in each of the six years from 1882 to 1887, together with the averages for the period:

Field Crops.	1887.	1886.	1885.	1884.	1883.	1882.	1882-7.
Fall Wheat...	897,743	886,402	875,136	864,740	1,097,210	1,188,520	968,292
Spring Wheat.	484,821	577,465	799,463	721,647	586,410	586,817	626,104
Barley	767,346	735,778	597,873	700,472	757,156	848,617	734,540
Oats	1,682,463	1,621,901	1,543,745	1,481,828	1,418,309	1,387,487	1,522,622
Rye.....	68,362	67,779	78,293	103,416	188,111	185,276	115,206
Pease	726,756	703,936	646,081	570,928	542,771	560,770	625,207
Corn	163,893	156,494	167,831	174,560	214,237	206,755	180,628
Buckwheat....	64,143	70,792	61,776	65,836	67,802	50,035	63,397
Beans	20,275	21,072	24,651	24,878	25,907	19,787	22,762
Potatoes.....	140,283	140,143	159,741	168,757	166,823	160,700	156,075
Man'l-wurzels.	17,924	18,170	16,435	18,341	17,219	15,791	17,313
Carrots	9,110	9,267	9,024	10,987	11,270	9,955	9,936
Turnips	105,322	98,931	102,303	104,199	98,429	78,823	98,001
Hay & Clover.	2,280,643	2,295,151	2,268,091	2,193,369	2,350,969	1,825,890	2,202,352
Totals....	7,429,084	7,403,281	7,350,443	7,203,958	7,542,623	7,125,223	7,342,435

There is a slight increase in the total acreage in 1887 compared with the previous year, and the figures are also greater than the average for the six years. A line representing the acreage of fall wheat for the period would dip for the years 1882-4, and then make a more gradual rise for the last three years. The area given to this staple in 1887 was nearly 25 per cent. below that of 1882, and was 70,549 acres less than the average for the six years period. Spring wheat increased in acreage during the first four years of the term, but decreased at a more rapid rate during the last two years. The acreage of barley fell during the first four years, but rose again in the two succeeding years until the area had reached an extent not exceeded since 1882. Rye, although a few hundred acres more than in the previous year, exhibits a great falling off compared with the average for the six years. Pease appears to be growing in favor, a steady increase in the acreage being observable since 1883. Among the root crops the acreage of potatoes is almost identical with that of the previous year, and consequently below the average for the six years period. Turnips, however, were sown to a much greater extent than in 1886, and show a larger acreage than any other year of the period, not excepting 1884. There is less change proportionately to be noticed in the acreage of hay and clover than in any other item of the fourteen given in the above table.

In the table following the number of acres under crop are given by county groups, and also the percentage of cleared land under crop for 1887 and for the six years 1882-7 :

Districts.	Acres under crop.							Per cent. of cleared land under crop.	
	1887.	1886.	1885.	1884.	1883.	1882.	Average 1882-7.	1887.	Average 1882-7.
Lake Erie	932,076	920,626	919,395	899,503	918,837	851,782	907,036	71.0	71.7
Lake Huron	781,833	772,120	762,718	743,322	790,126	710,573	760,115	64.7	66.3
Georgian Bay....	656,184	647,156	646,713	631,844	669,732	637,064	648,115	66.3	67.9
West Midland ...	1,455,376	1,426,069	1,447,747	1.396,151	1,491,763	1,414,673	1,438,630	65.7	66.9
Lake Ontario	1,609,981	1,597,507	1,577,546	1,577,521	1,640,591	1,556,106	1,593,209	71.0	71.9
St. L. and Ottawa	1,371,322	1,396,090	1,368.026	1,340,922	1,376,117	1,334,410	1,364,481	62.1	64.4
East Midland....	539,460	562,249	545,180	534,780	568,463	556,886	551,170	67.7	70.8
North'n Districts.	82,852	81,464	83,118	79,915	86,994	63,729	79,679	75.9	82.7
The Province.	7,429,084	7,403,281	7,350,443	7,203,958	7,542,623	7,125,223	7,342,435	66.9	68.5

The St. Lawrence and Ottawa counties and the East Midland group show a decrease in the number of acres under crop as compared with 1886, but in every other group a slight increase is to be observed. While the percentage of cleared land increased .7 in 1887 over 1886, the percentage of cleared land under crop was less by .8, and less than the average of six years by 1.6. This indicates that farmers are bestowing more attention on pastures,—grazing and dairying giving better returns than the system of cropping once in such high favor.

PROPORTIONAL AREA IN CROPS.—In the following table the number of acres under each crop per 1,000 acres of cleared land are given by county groups for 1887, together with the totals for 1886 and the average for the whole province in the six years 1882-7 :

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. L. & Ottawa.	East Midland.	Northern districts.	The Province.		
									1887.	1886.	1882-7
Fall Wheat.....	168.8	124.3	73.8	120.1	67.6	4.1	30.1	4.7	80.8	81.0	90.3
Spring Wheat	8.3	23.2	66.2	26.8	61.5	51.7	76.6	59.6	43.6	52.8	58.4
Barley	27.2	50.4	58.6	59.7	136.9	39.3	102.7	14.2	69.1	67.3	68.5
Oats	130.9	149.7	159.4	157.8	127.9	178.5	150.4	168.7	151.5	148.3	142.0
Rye.....	8.1	.5	1.9	1.9	9.7	7.3	15.5	4.5	6.2	6.2	10.7
Pease	60.5	73.9	79.1	67.3	78.0	40.9	69.9	72.5	65.4	64.4	58.3
Corn.....	66.3	6.3	1.2	10.3	11.1	6.6	6.7	2.2	14.7	14.3	16.8
Buckwheat.....	7.7	.8	.8	1.2	7.5	11.9	7.3	3.5	5.8	6.5	5.9
Beans	11.1	.5	.2	.3	.6	1.1	.5	.2	1.9	1.9	2.1
Hay and Clover ...	206.2	195.2	194.1	181.5	180.3	260.5	193.4	381.2	205.3	209.8	205.4
Potatoes	11.3	9.6	12.2	10.9	12.7	15.9	13.7	25.4	12.6	12.8	14.6
Mangel-wurzels....	1.0	1.8	1.0	2.7	1.9	.7	1.6	1.8	1.6	1.7	1.6
Carrots.....	.6	.7	1.0	.9	1.0	.6	1.0	1.3	.8	.8	.9
Turnips	1.7	10.4	13.1	15.6	13.7	1.7	7.7	18.7	9.5	9.0	9.1
Totals..1887..	709.7	647.3	662.6	657.0	710.4	620.8	677.1	758.5	668.8	.....	.....
Totals..1886..	709.9	645.3	673.6	650.9	712.8	645.5	714.8	790.7	.....	676.8	.....
Totals..1882-7	717.4	662.5	679.0	669.2	718.7	644.3	708.4	826.9	.....	.....	684.6

In comparing the items in the above table it will be seen that hay and clover are without exception the leading crop in each of the county groups, while oats comes next in every group except the Lake Erie counties, where fall wheat exceeds it. In 1887 the fall wheat and spring wheat combined were 27.1 acres less than the acreage of oats for each 1,000 acres of cleared land in the province, while the average for the six years' period shows that the area of wheat exceeded that of oats by 6.7 acres in the 1,000. Barley, oats, pease and turnips were the only crops in which the proportion for 1887 exceeded the averages of the six years' period. The three principal cereals in each group for 1887 are named in their order as follows: Lake Erie,—Fall wheat, oats, corn; Lake Huron,—Oats, fall wheat, pease; Georgian Bay,—Oats, pease, fall wheat; West Midland,—Oats, fall wheat, pease; Lake Ontario,—Barley, oats, pease; St. Lawrence and Ottawa,—Oats, spring wheat, pease; East Midland,—Oats, barley, spring wheat; Northern Districts,—Oats, pease, spring wheat. Rye is the smallest grain crop in any group save the St. Lawrence and Ottawa counties, where it is grown to a larger extent than fall wheat, the least popular of the cereals in the extreme east of Ontario.

Area in Pasture.—In the annexed table the number of acres under pasture are shown, together with the rate per 1,000 cleared in 1887. The figures given for the three years 1884-6 cannot be used in comparison with those of 1887, for in the latter year the schedule to farmers was changed so as to include pastures on cleared land only. The dairying counties of the St. Lawrence and Ottawa group lead in the proportion of acres devoted to pasture, and the Lake Huron group, in which horses and cattle are extensively bred, comes next, with the East Midland and West Midland groups following closely:

Districts.	1887.	1886.	1885.	1884.	Rate per 1,000 acres cleared in 1887.
	Acres.	Acres.	Acres.	Acres.	
Lake Erie	240,586	357,906	348,323	309,696	183.2
Lake Huron	296,316	355,981	327,942	328,101	245.3
Georgian Bay	204,903	230,088	214,957	212,444	206.9
West Midland	512,349	607,906	576,195	570,833	231.2
Lake Ontario	404,893	465,587	453,066	438,011	178.7
St. Lawrence and Ottawa	667,034	791,014	765,263	724,344	302.0
East Midland	186,850	200,968	208,254	195,076	234.5
Northern Districts	16,008	16,871	17,199	16,481	146.6
The Province	2,528,939	3,026,321	2,911,199	2,794,986	227.7

The pasture-land thus appears to be reduced by half a million acres, but this is a result of the change in the schedule referred to above. It was found that under the old schedule many farmers included as pasture portions of thinly wooded land which were used as cattle ranges, but which could not properly be reckoned as cleared land.

FALL WHEAT.

The record of the fall wheat of 1887 shows that, notwithstanding the splendid start given the young plants before the snow fell in the previous fall, circumstances combined to render the crop one of the poorest recorded in the province for many years. The area sown to fall wheat was 11,341 acres more than in 1886, but the total yield fell 3,630,531 bushels short of the yield of that year, being about one-fifth less. Entering into the winter with

the fields evenly covered with stout, hardy-looking plants, disaster of various kinds visited the crop during the three seasons of winter, spring and summer. In many localities the young wheat suffered from smothering from deep snow ; and, later on, in February, March and April, open weather with alternate thawing and freezing wrought havoc on many promising fields. When the warm rains and growing weather came, it was found that the crop had been so badly thinned and presented so patchy an appearance that hope of a full yield was abandoned, although it was thought possible that the fields might recover sufficiently to keep the crop from turning out a serious failure. Then came the prolonged drouth, covering a period from May up to the very early harvest, and this made further draft upon the vitality of the plants, and prevented anything like a fair prospect of an average yield. The Hessian fly wire worm and white grub did considerable injury, and rust also appeared in various portions of the Province, adding to the general damage. The only bright spot in the record of this crop is the fact that in most places it was harvested without a drop of rain, and the berry, though small, was hard, sound, and proved a good sample in the mill. The average yield of fall wheat for the Province in 1887 was 16.1 bushels per acre, against 20.4 in 1886, and 21 for the five years 1882-6. In the northern districts only was there anything like a good general yield, the virgin soil of the new settlements giving an average of 24.3 bushels to the acre, notwithstanding the dry summer. In the Lake Huron group of counties, where fall wheat is the principal crop, as it is in most of the western counties, the average was only 14.9 bushels per acre, and at the other end of the province, in the St. Lawrence and Ottawa counties, the average was but 14.5 bushels. The harvest was fully two weeks earlier than usual, and in some places the grain was cut as early as the first of July. In several instances the crop was not only cut and harvested, but also threshed by the end of July. The following table gives a comparative statement of the acreage and yield of the crop in the years 1886 and 1887 :

Districts.	1887.			1886.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	221,748	3,545,985	16.0	230,280	4,600,438	20.0
Lake Huron	150,098	2,233,535	14.9	148,405	3,262,962	22.0
Georgian Bay	73,045	1,244,817	17.0	66,244	1,193,729	18.0
West Midland	266,054	4,196,280	15.6	253,484	5,355,596	21.1
Lake Ontario	153,217	2,671,074	17.4	152,819	2,826,348	18.5
St. Lawrence and Ottawa	9,088	131,469	14.5	9,245	186,073	20.1
East Midland	23,975	404,861	16.9	25,830	644,477	25.0
Northern Districts	518	12,590	24.3	95	1,519	16.0
Totals	897,743	14,440,611	16.1	886,402	18,071,142	20.4

Compared with the annual average crop of the five years 1882-6, the area is less by 84,659 acres, and the product less by 6,195,232 bushels.

Lake Erie Counties.—The fall wheat crop in the Lake Erie counties had to contend with a combination of almost every one of the many untoward influences to which it is always more or less subject. The seed was generally put in in good condition and the crop made a promising start, but the frosty nights and dry, cold days of March and April proved a fatal visitation over large areas, especially on low, mucky soils and heavy, undrained clay, while a few fields on high, exposed situations met the same fate by the removal of the snow in the February thaw. On some clay soils the crop was badly heaved, in other places occasional fields were killed by smothering, owing to a too rank growth in the fall ; the formation of ice in the winter did some damage, while the white

grub, Hessian fly and wire worm each contributed its share in the work of destruction. The damage from these various causes was not so severe in Norfolk and Haldimand as in the other counties of the group ; but, taking these counties as a whole, a large portion of the crop had to be plowed up, and what was left was in anything but a proper condition to withstand the vicissitudes of a peculiarly trying summer season. The intense drouth of June and July injured seriously many fields which had escaped with comparative impunity from the succession of adverse influences to which the crop had been subjected. According to the August reports the effects of the drouth were almost the same in degree throughout all the counties of the group. Some few localities in each suffered comparatively little, owing to the wheat being nearer maturity when the heat began to affect it. It is doubtful, however, if even one field was entirely unaffected, while as regards at least three-fourths of the crop the damage caused by premature ripening was serious. Some samples were shrunken, or, if plump, much smaller than usual, though generally sound and hard. One report from Essex mentions damage by wind. Injury by the cut-worm, the midge and the Hessian fly were reported by a few correspondents. Hessian fly and rust were injurious to some extent in Kent, and premature ripening was very general. Some fields, sheltered from the cold winds of the early spring, were in good condition to withstand the drouth and yielded very well. The Elgin reports were much the same as those from Essex and Kent. Where the wheat had escaped the March and April frosts it promised well, but the yield was materially shortened by the June and July drouth. The damage by insect pests and rust was not serious. In Norfolk and Haldimand the winter and spring killing was less serious than in Essex, Kent, and Elgin, but the effects of the drouth were much the same. Generally speaking, the better condition of the fields before the heat came only led to greater disappointment at the final result. One correspondent states that the Seneca variety withstood the drouth most successfully. Rust was somewhat damaging in a number of low-lying fields. In Welland, where the March and April frosts caused considerable damage, the crop was altogether very disappointing, although a few localities specially favored in different ways gave satisfactory reports. In all the Lake Erie counties the fall wheat harvest was unusually early. In two or three cases it commenced about the 1st of July, and the majority of the farmers had their reapers at work by the end of the first week in that month. All the wheat was harvested and some of it threshed by the end of July. The grain was saved in excellent condition, as the harvest weather was perfect. Self-binders are used very generally in these counties, and the labor supply was quite equal to the demand except in a very few districts.

Lake Huron Counties.—There was a slight increase in the acreage of fall wheat in the counties comprising the Lake Huron group. The seed got a good start in the ground and made rapid growth during the autumn ; in fact when the snow came it found the new wheat of a rather too luxuriant growth. The wire-worm, the Hessian fly and white grub had done considerable injury in places, but on the whole the crop entered the winter season promising well. Yet the spring found it looking very uneven, ranging from first-class to almost a total failure, and on the whole much behind that of the previous year. The damage appeared to be done not so much in the winter as in the spring, the alternate thawing and freezing of February and the bleak weather of March and April telling greatly upon the young fields. In Bruce and Huron there was also some smothering by deep snow overlying the rank growth of the fall, but there was not so much fall wheat plowed up in the spring in Bruce as there was in Huron and Lambton. The beginning of May found the crop in a weak condition, and the usual consequences followed—the constitution lacking strength and vitality easily succumbed to adverse climatic conditions and the attack of insect enemies. Heat and drouth prevented the plants from tillering out properly, and the stand was generally thin on the ground. The crop lacking moisture and sustenance, failed to develop fully, and it dried up and ripened prematurely. When harvest came the straw was short, the heads small and light, and sometimes not filled out to the end, and the berry was considerably under size. This was the average condition of the crop throughout the group. There were exceptional cases where, owing to

good tillage or to the influence of shelter by woods from the winter frosts, the crop fared better, and was strong enough to withstand pretty successfully the succeeding heat and drouth, but these were by no means general. In low-lying and poorly drained fields, and where the crop was late, it was struck with rust, which caused the grain to shrivel up and present a shrunken appearance. The Hessian fly caused serious injury in a number of localities by operating at the lower joint of the plant, and so weakening the stalk that the crop was "crinkled," as it is termed, preventing full development of the grain and making harvesting operations very difficult. In other reports the presence of the midge was mentioned, though not to so great an extent as the fly. The heat and drouth alone did not prevent the grain from filling out and appearing quite plump at harvest, though of small size; it was only where the crop was attacked by rust or insects that the grain was seriously shrunken. Fall wheat was everywhere secured in excellent condition, owing to the dry weather, and farmers were compensated in some small measure for the shortness in yield by the fact that the grain threshed out sound and hard. Cutting began in this group in the first week in July, and became general during the second week. The labor supply was generally ample, and self-binders and other labor-saving implements were used to an increased extent.

Georgian Bay Counties.—There was a little more fall wheat sown in the Georgian Bay counties than in the previous year. The ground was in good order at the time of seeding, and the crop getting a splendid start had a fine appearance by the time winter set in. The Hessian fly was reported as putting in an appearance in grain, although but slight damage was done by insects in either county. The May reports were generally favorable and comparatively few of them mention ploughing up or re-sowing. April weather was much less fatal in Grey than in the more southerly counties, probably on account of the snow lying longer on the fields, but there was some injury from this cause. Snowdrifts along the fences and on the lee sides of ridges smothered some wheat, while fields exposed to the north-west winds were more or less hurt. Ice in the hollows was complained of in some localities. Fields having good natural or artificial drainage and sheltered to any extent were generally in very good condition. Only three or four reports mentioned wire-worm or Hessian fly. Very few fields seem to have been total failures, and several correspondents declared that the crop looked better in the spring than it had for years. On some of the level lands of Simcoe the formation of ice was fatal to the crop, either killing it out completely or leaving it in so delicate a condition that it was quickly finished by the April cold. The latter agency was much more destruc- in this county than in Grey, while there was less injury caused by snow. The crop on the whole was much better than last year, though not nearly so good as in Grey. The area plowed up was not large except in the township of Essa, where the April frosts seemed to be peculiarly destructive and led to the plowing up or re-sowing of from a half to two-thirds of the fields. The wire-worm was not troublesome except in old sod fields. The August reports were far from encouraging, for although the drouth was not so severe as in other sections of the province the damage from winter-killing and trying spring weather left the crop in such a condition that it could not "pick up" during the summer. As to the quality of the grain that survived the adverse conditions of the winter and spring, the reports were somewhat variable. Some correspondents reported a fine plump berry harvested in admirable condition, but a majority held that the intense dry heat whitened rather than ripened the grain, which, though hard almost to flintiness, was shrunken and under-sized. Though some correspondents complained of rust and one of Hessian fly, the crop in the Georgian Bay counties seems to have been fortunate enough to escape any very general damaging from these too often potent agencies. Altogether it would appear that a two-thirds crop of sound, hard grain of under-sized berry was harvested in admirable condition. Some few reports, however, spoke of a "good yield and fine sample." The harvest was early, beginning about the middle of July (in some cases as early as the 12th) and ending about the end of the same month, some few extending into the first week in August. In some portions of Simcoe self-binders are rapidly coming into use, but in Grey much of the wheat harvesting was done with the reapers and mowers.

West Midland Counties.—The history of the fall wheat crop in the West Midland counties for 1887 is pretty much the same, so far as results are concerned, as its history in other parts of the western peninsula. The various agencies which contributed to make the crop little better than a failure were nearly similar in all cases, the only difference being in the amount of damage done by each. In the spring some counties, particularly Oxford and Waterloo, gave promise of a good return, but as the season advanced it became evident that the destruction by adverse climatic influences and various insect pests was pretty evenly distributed throughout the whole district, although Oxford perhaps suffered somewhat less than the other counties. In Middlesex, in addition to loss from winter-killing, the Hessian fly and the wire-worm did some slight damage, and the drouth added to the injury. However, with dry weather and plenty of self-binders, the crop was well harvested, although the grain was rather shrunken owing to the rapid ripening. Some fall wheat was cut in this county as early as the 4th of July. Oxford, happily, fared better than Middlesex, for although suffering from the ice of winter and the cold of frosty spring, a fair yield was reported ; and although the grain is small, it is clean and bright, and the crop was got into the barn under most favorable conditions. In Brant the fall wheat was a decided failure. A bad winter and spring, drouth and rust, left the crop light and the grain poor and shrunken. The patchy fields that the spring revealed in Perth promised but little, and the fruition was in accord with the promise. Rust occurred, and the backward spring and continuous drouth of summer combined to make the yield very small. In some portions of the county the grain was cut green for feed. Wellington, owing to winter-killing, rust and drouth, also fell far short of an average yield although an occasional good field is reported. In Waterloo rust and premature ripening, as well as ice in the winter, were given as the causes of the grain not being up to the average. Dufferin suffered from similar causes. The bulk of the fall wheat in this group was harvested by self-binders ; many who did not own these modern machines hired them. A few old-fashioned reapers were also used, and cutting by hand was a rarity. The fall wheat harvest closed without any great want of extra farm labor being felt. The period of harvesting was unusually early, and the early ripening of the fields left the straw rather short in stalk, but in good condition for cutting.

Lake Ontario Counties.—The area given to fall wheat in the Lake Ontario counties was about the same as that of last year. The crop made good progress during the fall, and being almost free from insect pests presented a good appearance as it entered into the winter. In Lincoln, Wentworth and Halton the wheat came out in the spring in fair condition, but in the other counties of the group much damage was done by the formation of ice in mid-winter, and many fields were plowed up. The August reports described the crop as in a similar condition to that of the counties farther west. The Hessian fly did some slight damage in Lincoln, but the drouth especially left its mark on the fall wheat, which ripened permaturely, leaving the berry small and shrunken, although bright. In Wentworth a like experience was reported, with complaints of rust. The straw, however, was good. Rust also occurred in Halton, where the crop was very uneven. In Peel the fall wheat suffered from ice in winter, and although the yield was light, owing to drouth and other causes, the sample was fair. Rust did some damage in York, and as there was considerable winter-killing a small yield was the rule. A better condition of things prevailed in the county of Ontario, where a good crop was taken from the fields which escaped winter-killing. Very little fall wheat was grown in Durham, but in Northumberland, although of course the crop was far from a large one, the quality of the sample was described as fine. There was but a small acreage sown in Prince Edward, and that came through the winter and summer very badly. The almost entire absence of insect pests is noticed by correspondents in the Ontario group of counties.

St. Lawrence and Ottawa Counties.—The area devoted to fall wheat in the St. Lawrence and Ottawa counties is never very large, owing to the uncertainity of the

crop, and the acreage last year was rather less than usual. Ice and snow injured the crop very seriously in many places, although, by reason of the practice followed by many farmers in these counties of "seeding down" with fall wheat, the area plowed up bore no proportion to the acreage thus damaged. The surviving fields and patches suffered less from drouth than in the western counties, and generally turned out fairly well. Frontenac, Leeds and Grenville and Dundas are the only counties of the group in which fall wheat is much depended on as a crop, and in these counties there has been an unsatisfactory yield, owing to the adverse causes mentioned. The wheat was generally saved in fine condition, and the sample is fair. Some farmers report that in fields which were "seeded down" the grass was a fair crop in patches where the wheat was killed out.

East Midland Counties.—In this group the fall wheat caught splendidly at sowing time, and promised well in its first stages. Unfortunately it did not winter well, and in the spring presented anything but a favorable appearance. A fair percentage of the May reports from Victoria mentioned good crops, especially on well tilled fallows and new ground, but the majority of the fields were either killed out or badly thinned by the ice and the frosts. In Peterborough the failure was even more extensive than in Victoria, and from the same causes. Upland gravelly fields and those enjoying shelter escaped pretty well, but the favourable reports were exceptional. The northern part of the county seemed to have suffered least. Hastings reports were much the same in tenor as those from Victoria and Peterborough. In all three counties a large proportion of the crop was plowed or re-sown, especially where the ground was not seeded down. The crop suffered in summer from the drouth, although hardly to the same extent as in some of the counties to the west, but although the yield was small, the sample in the counties of Victoria, Peterborough and Hastings was of fair quality. In Haliburton hardly any fall wheat was grown. In portions of Peterborough a scarcity of labor was felt during harvest, but, on the whole, the self-binder got over the fields in time. The straw was reported as rather short and brittle. Very little damage occurred to the grain from rust or insects.

Northern Districts.—What little fall wheat is grown in these districts is raised in Parry Sound, and it came through the winter, the spring and the drouth very well. Labor-saving machinery is rapidly coming into use in this region.

FROM THE MAY REPORT.—(May 15.)

J. H. Morgan, Anderdon, Essex: Fall wheat is generally bad. In gravel and sand it is pretty good; in clay and loam it has been badly killed by the March frosts. There will be half a crop on the average. About one-eighth of the whole crop has been plowed up or re-sown with spring grain.

R. H. Waddell, Tilbury East, Kent: The general appearance is not by any means encouraging. On light loamy soils it is very much injured; on well-drained clay soil it has stood the winter best. It was injured by frost, followed by some weeks of dry, cold weather. Some fields have been entirely destroyed, and in others from one fourth to one-half has been killed. A few fields came out pretty well. There was very little injury from worms. Some fields have been re-sown, and some portions of others.

S. McDonald, Orford, Kent: On the high land it is very good—the best I have seen in many years. On clay lands it is badly killed. The plants left are vigorous and healthy. Water freezing into ice after thaws and rain did most of the injury. A small portion was killed by the wire-worm. Small patches have been plowed up on a few farms—perhaps not half a dozen in the township.

J. Robinson, Southwold, Elgin: Fall wheat is looking very spotted, but is beginning to pick up. On the sand it is looking very bad from the effects of the long continued drouth. On heavy clay land it looks very well, except in patches where the ice lay on it. Snow, rain or frosts did scarcely any damage. The wire-worm did considerable damage to some fields in this locality last fall. Some wheat has been plowed up from the effects of the wire-worm.

Robert Watson, Windham, Norfolk: Fall wheat is good on all soils. On sandy soil it is first-class; on clay a little spotted. There was no injury in winter except on sand in low spots where the water lay and ice was formed, and on clay when badly drained. Wire-worm did some damage in the fall. There is none plowed up.

Wm. Mussen, Oneida, Haldimand: The fall wheat crop is fair, much better than was anticipated some time ago. It is best on gravels and loams, particularly rolling land. On low land it was injured to quite an extent by frosts at night and by warm days. There is none plowed up here.

Jos. Mumby, Moulton, Haldimand: Fall wheat is first-class on sandy soil where sown early. It is winter-killed on clay. It appeared to come out all right when the snow went away, but where it was exposed it died right away. There has been some plowed up. Fully one-half the crop was injured 50 per cent., especially that late sown. Some few fields were injured by worms.

John A. Law, Stamford, Welland: Fall wheat looks well generally. A small percentage was injured by March frosts on low lands, and some spots were killed by ice and snow. There are no complaints about worms or insects. There is none plowed up. Everything promises a fair average crop.

A. A. Meyers, Sombra, Lambton: Fall wheat looks fairly well, but was badly frozen out on rich clay soil, and was smothered in many places where the growth was heavy last fall. It was also badly destroyed by wire-worm in many places, especially in rich, loose soil. Many fields have either been sown over with spring grain or plowed up.

John Dallas, Bosanquet, Lambton: Fall wheat is very uneven—from first-class in some fields all the way down to a total failure in others. On the whole it is below the average. There is not so much difference in the nature of the soil as in the condition of culture, such as manuring, clovering and tiling. It was considerably injured by spring frosts. The worm is a growing nuisance, some fields being ruined by it. Several fields have been plowed up in this township—more than for several years—chiefly on account of wire-worm.

G. Edwin Cresswell, Tuckersmith, Huron: Fall wheat is badly killed. It is best on free, open soils with plenty of natural drainage. The injury has arisen from too heavy a covering of snow, and spring frosts followed by dry weather. A considerable amount has been plowed up.

Robert Currie, Wawanosh West, Huron: Fall wheat is very thin. It is best on light soils, where the land was dry and an open sub-soil. The snow was too heavy, and thaws in the winter left great quantities of ice on the land, and the wheat was smothered. It is not much injured by insects. About one-fifth has been plowed up and put in barley.

Thomas Wilson, Huron, Bruce: The fall wheat is much better than I have seen it for a good many years. It is good on all soils and varies very little. Where the top was very heavy in the fall and the snow lay deep in the winter, it appeared to melt away, roots and top, in some few fields. These fields will have to be plowed, but none others that I know of.

W. G. Ritchie, Greenock, Bruce: A considerable area of the fall wheat of this locality is badly smothered by the heavy snows of last winter. The ice did not do as much injury as in some former seasons. No difference appears to occur on the various soils. I would judge about one-third has been killed by heavy snow. Probably about one-fourth of the area will be plowed up.

Wm. Irvine, Bentinck, Grey: Fall wheat is good. On soils having a dry bottom it is best. It is injured to some extent in places where the snow-drifts were deepest and lay longest. It seems to be free from worm and insect pests so far. There has been none plowed up, nor is any likely to be.

John Black, Bentinck, Grey: Fall wheat in this neighborhood has suffered considerably from frost, ice and deep snow. Some are plowing it up and sowing barley. On light land it looks better. No insect pests in this neighborhood.

R. T. Banting, Essa, Simcoe: In the Township of Essa it is very badly killed out, not more than one-fourth of a crop being left. The low clay soils appear to have fared best. It was the cold weather of April after the snow going that injured the wheat. There were no worms or insects that I have heard of. Hundreds of acres have been plowed. Some farmess have plowed up over 40 acres.

Jasper Martin, Medonte, Simcoe: The condition of fall wheat is good on the whole. It is fully best on clay soils, except in some very low and wet spots. In some places around the fields where the snow has drifted it is smothered out, and some low places with ice. Insects don't appear to have done any damage. I am not aware of any being plowed up.

J. Alexander, Ekfrid, Middlesex: Fall wheat is very patchy, and will be about two-thirds of a crop. It is worst killed out on heavy clay soil. It was not injured by snow or ice, but by the long, dry, frosty weather in spring. Considerable injury was done by worms last fall in some parts, but not general. More wheat land has been plowed up and re-sown this spring than I ever remember of seeing before.

Joshua Irvine, Lobo, Middlesex: Fall wheat is not up to the average. Wheat looked well when the snow went away, but, owing to a long spell of frost and dry, cold weather, at least one-third of the plants were killed. About one-eighth has been injured by insect pests. Do angle-worms destroy wheat? I say they do destroy quite a lot that is credited to the wire-worm. I have a field in which I cannot find any wire-worms, but angle-worms are numerous, and at least one acre in every eight is destroyed.

D. R. Calder, E. Nissouri, Oxford: Fall wheat is above the average. On dry and light soils, when sowed early, it was very good. It has not been injured by the winter snow, but we had a spell of hard, dry weather in the first days of April that injured it considerably where it was not vigorous. Sod broken up last year and sown with wheat has been injured a good deal by worms.

James Anderson, East Zorra, Oxford: Fall wheat promises to be a moderate crop. Some fields are good, and it is now growing fast. Soils do not seem to make so much difference as usual this season. The difference is according to the quantity of manure used on the land, first-class being well manured, and very poor having none. Some spots were killed by the ice. Some fields were damaged last fall by the white grub. Very little has been plowed up or is likely to be.

A. Freeman, Burford, Brant: Fall wheat on clay soils has come through the winter in splendid condition. On sandy soils it has been winter-killed by ice lying on too long, and is only two-thirds of a crop. On black sandy and clay soils the worms destroyed some in spots, but not to any extent. No wheat is being plowed up this spring.

Wm. Douglas, Onondaga, Brant: The general condition of fall wheat is very good. I have hardly ever seen it better. Its condition is best on clay soils where the water is properly let off. Where the wheat had too much top last fall it is smothered or scalded out in places, but not to a great extent. I have seen no injury by worms or insects. There has been no wheat land plowed up around here to my knowledge.

Robert Beatty, Blanshard, Perth: The general condition of fall wheat is below the average, I think fully 30 to 40 per cent. The best fields are spotted, and I have seen none that I would call a full crop. Considerable has been plowed up, and I see a good deal more that should have been.

George Leversage, Fullarton, Perth: Fall wheat is not looking as well as it did a month ago. Those two or three frosty nights about the middle of April very seriously injured the wheat, leaving a good many fields very much spotted, and some fields will have to be plowed up. I think there is no damage from worms or insects.

Walter Quennell, Minto, Wellington: Fall wheat from present appearance, will not be over two-thirds of a crop. It was smothered out by ice in places and by snow around the fences. All sorts of land have fared the same. What is yet growing looks healthy.

H. McDougall, Guelph, Wellington: The fall wheat is very patchy. On some farms all the level land, where ice accumulated, is thoroughly killed. On all the high, dry, rolling land wheat is looking very well and forward for this date. A few patches in this neighborhood have been plowed up.

John Gillespie, North Dumfries, Waterloo: I think pretty nearly one-quarter of the wheat has been killed. What is left looks fairly well. There is not much difference on the different soils. Some has been plowed, up, but mostly in spots, not in whole fields.

A. Rannie, Wellesley, Waterloo: The fall wheat is looking very well here. There is some killed where the water lay on it. The land that is well under-drained is looking well. Where the land is hilly the wheat on the tops of the hills is killed, and some that was sown early had too heavy a top, causing it to smother.

Robert Dickson, Luther East, Dufferin: The condition of fall wheat is not good. Wherever the ice formed it has almost all been killed.

Wm. Dynes, Mono, Dufferin: Fall wheat is very poor. It will not be one-half crop. About one-third will be plowed up. The ice in the winter destroyed it a good deal, and spring frosts hurt considerable

John Secord, Grantham, Lincoln: Fall wheat in this section looks very promising, and very little injured with snow or frost; not over ten per cent., and that may have been caused by the Hessian fly in spots last fall. There is none that is likely to be plowed down for any other crop in this section.

D. B. Rittenhouse, Louth, Lincoln: Fall wheat looks well and is far advanced for this time of the year. It is good on all soils except very low land. No injury worth mentioning from snow, ice, rain or frost. There is little or no damage by worms or insects, and no danger of any being plowed up.

John Blasdell, Beverley, Wentworth: Fall wheat is good. I think it looks best on clay soil. It was very little injured in winter. Insects injured it to the extent of perhaps 15 per cent. last fall. A worm resembling the fish-worm ate the root and made it patchy. I do not think any will be plowed up.

M. Clements, Trafalgar, Halton: Fall wheat generally looks well—better than for some years past. It was injured to some extent on low and badly drained lands by snow and ice. I have heard of no injury by worms or insects. No wheat land has been plowed up, nor is there any likely to be.

Wm. McKay, Toronto, Peel: Fall wheat is better than last spring. It is best on high land, and light soil is generally best. Ice injured it in some low places and in the furrows. The cold, dry winds in the last week of April did it more harm than the ice. Some exposed places were injured by frost. There was not much injury from insects. I have seen a little by wire-worms on some old sod that was summer fallowed and put in with wheat. I have not seen any plowed up and I don't think there will be any in this section.

Peter McLeod, Chinguacousy, Peel: Fall wheat in this vicinity will be below average. The most damage done was by ice accumulating on the fields during winter. The snow has done little or no damage. However, I do not think there will be much plowed up. Wheat on high land and light soil has done by far the best. There was considerable damage done to some fields by wire-worm where summer fallowed from sod.

D. Fotheringham, East and West York: The general condition of fall wheat seems to me about the average, as I have seen it in Vaughan, Markham and York Townships. It has been damaged by ice nearly everywhere, and in the north of Markham some say there will only be a half crop there, but generally it seems to me above an average and is growing rapidly now.

David James, Markham, York: Fall wheat is bad. On what very often is called a "sharp soil," *i. e.*, a mixture of sand and clay, it is the best. On low-lying land with a heavy clay subsoil, with vegetable mould surface, it is the worst. Nearly one-half has been injured by ice. One-sixth has been and another sixth should have been plowed up. One-third promises more than half of a crop and another third is very good.

Joseph Picket, Uxbridge, Ontario: Fall wheat has come out pretty well wintered and very little, if any, has been plowed up. The lowest ground seems to be rather the best. The most injury done was in the spring by freezing hard at nights. There does not appear to be any harm done by insects of any kind.

Benjamin F. Browne, Thorah, Ontario: Fall wheat looks poorly. One-half has been plowed up and the rest will likely furnish half a crop. The ice in March and frosts in April were the principal causes of the injury.

James Brock, Cavan, Durham: Fall wheat is badly killed. More than half has been plowed up and what is left is badly thinned out. It is best where the fields slope to the south. The wheat was injured by the late frosts when the ground was wet.

Jonathan Dunn, Brighton, Northumberland: The general condition of fall wheat is not good, fully one-half being killed out. On well sheltered land it is fair, but on unsheltered and low land it is very poor. It was injured to a great extent by frost, and where ice lay on it late it is all gone. Some has been plowed up, but much more was sown with spring wheat and only harrowed, as many farmers had sowed clover early and did not like to plough it down.

James Roberts, Alnwick, Northumberland: Fall wheat is fair, being best on loam. Some has been smothered by snow and ice in very low places, and on high and exposed places partially killed by recent frosts. It is not worse than in other years. There will not be much plowed up.

Edward Roblin, Ameliasburg, Prince Edward: Fall wheat is poor, being badly winter-killed. There is no apparent difference on different soils. The damage is principally by ice. None has yet been plowed, and most farmers will let it remain, to produce what it will.

B. C. Lloyd, Camden, Lennox and Addington: Fall wheat can not be more than one-third of a crop, owing to the ice that covered the land and smothered the plants. Very little is being plowed, as farmers seed down with fall grain.

Angus F. Bond, Storrington, Frontenac: Fall wheat is very badly winter-killed. In some fields none is left except around the fences. Clayey soils not well under-drained are killed out the most. It has been almost all killed by the action of ice in the winter and spring freezing. No worms or insects noticed. Very little has been plowed owing to the fact that farmers seed down with it, and would rather do without the crop of wheat than lose their grass and clover seed.

John C. Stafford, Lansdowne Rear, Leeds and Grenville: Where not winter-killed, fall wheat is vigorous and looking well, but many fields are patchy, especially on clay soil. It will not be more than half a crop. None was injured by insects. None has been plowed, but spring wheat has in some cases been harrowed in to thicken it up.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Fall wheat in this township is anything but good. On high, dry soils there is some fair wheat, but on low-bottomed lands it is very badly winter-killed, and injured more or less by spring frosts. Some parties have re-sown, and others prefer leaving it alone, as there will be a crop of grass.

Alex. Farlinger, Williamsburg, Dundas: Wheat is coming on nicely. There being no frost in the ground in April, and a great depth of snow in places, it was smothered. April north winds did harm. I do not think any will be plowed up.

H. F. McDermid, Cornwall, Stormont: There is not much fall wheat sown, but what is sown promises an average crop. After the first thaw a frost for a few days caused ice to lie on some places and killed it.

Thomas McDonnell, Charlottenburg, Glengarry: Fall wheat promises at present an average crop. High lands appear the best.

James E. Craig, North Gower, Carleton: There is not more than twenty acres under fall wheat in the whole township, if there is that, and only sown in very sandy places between bushes. It looks well where the snow remained on it all winter.

Edmund Byrne, North Burgess, Lanark: Fall wheat is poor. It is best on high, sandy soils. It wintered well, but the ice lay too long in spring. Farmers in this township are reluctant to plow it up, for as a rule they seed it down.

John A. Jackson, Eldon, Victoria: Fall wheat is generally thin and patchy. It appears to do better on dry land, sheltered to the north or west. On flat lands it has suffered from both ice and snow to a considerable extent, and on high, exposed ridges from frost. Probably one-third of the fall wheat land in this locality has been plowed up.

Hamilton Spence, Dummer, Peterborough: Fall wheat has been rather badly killed by ice in winter and frost in spring after the snow was gone, more particularly on sandy or loamy soils and on low ground. Fully one-half of it will be plowed up, and the remainder is not likely to be a good crop.

Stephen Kettle, Glamorgan, Haliburton: Fall wheat is in a very fair condition. It was a little winter-killed, but is making a fair start.

John B. Morton, Huntingdon, Hastings: Fall wheat is in very bad condition. It appears to have wintered better on the lighter soils. The injury has been entirely owing to the thaw in the latter part of January. The water lay in sheets over the ground and became frozen solid, and in those places every plant was injured. Nearly all has been plowed up.

Stephen Brundige, Ryde, Muskoka: Fall wheat has not been much grown in this locality until this year, when several patches made their appearance. Although the snow was heavy the plants look healthy and strong.

Joseph Alton, Strong, Parry Sound: There was not much fall wheat sown. It looked a little delicate, but now, with the fine spring weather, it is coming on well.

O. Duross, Oliver, Algoma: The little fall wheat sown looks well. None was winter-killed.

FROM THE AUGUST REPORT.—(August 12.)

Henry Morand, Sandwich E., Essex: The crop of fall wheat is very light. Frost destroyed a great deal of wheat last spring when the ground was hardly covered by snow, and when the time to mature came, the drouth affected the grain. In several places, especially on sandy soil, a little insect cut many stalks, making the quality of the wheat got very plump.

Jasper Golden, Gosfield, Essex: Fall wheat will be below the average, as it was killed by the spring frosts. It was never in better condition in the stack or when put in barn. Cutting commenced about the first week in July. Labor help was sufficient, self-binders and other machines being much used.

G. M. Baird, Harwick, Kent: Fall wheat is a good, fair crop in this locality. It was harvested in good condition. Cutting began about July 1st, and the quality is No. 1 hard. A good number of self-binders were used in this vicinity, saving help.

L. E. Vogler, Zone, Kent: Fall wheat was injured by too rapid ripening, it being more or less shrunken. No rust with us, but some crinkling down, probably caused by the Hessian fly. The crop was well secured. Cutting began about the 6th of July.

D. McKillop, Aldboro', Elgin: Fall wheat suffered severely from spring frosts, and in many cases from the Hessian fly, which attacked early sown fields the worst. It was secured in first-class order, although the grain is not very plump as a general thing. Fields which were well protected on the north-west side turned out a good sample. The labor supply was plentiful, as more self-binders were bought this year than usual.

D. Campbell, Dunwich, Elgin: The winter was severe, and it was cold and dry in the early spring, and this followed by excessive hot, dry weather, dwarfed the crop. No summer frosts or hail occurred. The summer temperature was very high (85° to 90°), and all was harvested by the 24th of July. Cutting began about the 12th. The quality of the grain varies, some being plump and some shrunken.

J. A. Campbell, Windham, Norfolk: Fall wheat was very much injured by the dry weather and excessive heat, which ripened the crop too rapidly. The berry is small and more or less shrivelled. The heads do not appear to have been well filled. The yield has been disappointing. In many fields the grain was down, which some say was caused by the Hessian fly.

C. H. Kitchen, Townsend, Norfolk: Fall wheat was injured to some extent by the Hessian fly, but not seriously. The crop was secured in good condition. Harvesting began earlier than usual—about the 8th and 9th of July. The yield is less than the average, but the quality is very good. Self-binders are fast taking the place of day laborers in this township.

William Hedges, Walpole, Haldimand: Fall wheat never looked so promising in this locality as it did last spring, but from some occult cause many fields did not fulfil their early promise. There are, however, some good fields. The wheat ripened too fast on account of the great heat.

Joseph Martindale, Oneida, Haldimand: Wheat, two weeks before harvesting commenced, promised to be a very good yield, but the drouth and heat caused it to ripen too soon, and the result was small grain and unfilled heads. Harvesting commenced on July 11th.

A. Turnbull, Seneca, Haldimand: Fall wheat, quality good, and about an average crop.

James McClive, Bertie, Welland: Fall wheat is turning out badly. Our expectations are not nearly realized. The long drouth was the cause of the shortage. There was very little rust. Cutting began about the 10th and 12th of July. The grain was got in dry and the sample is fair.

L. Buckton, Crowland, Welland: The drouth caused the fall wheat to ripen too soon. Democrat is slightly rusted and considerably shrunk. All wheat appeared to ripen prematurely, or dry up, and two or three grains on the lower part of the head did not fill out at all. The weather was so dry a large quantity was cut and drawn in the same day. Cutting commenced July 9th. Wheat is all in good condition and the quality medium.

A. E. Wark, Plympton, Lambton: Fall wheat was affected very much by the intense heat and dry weather, and the grain is shrunken. Harvesting began about the 3rd of July, and was secured in good condition; the quality of the grain will be No. 2. The labor supply was scarce.

James Watson, Moore, Lambton: Many fields of wheat suffered by heaving out by frost in March and April, and the cold winds that prevailed in these months, and the drouth following in May injured the crop seriously. The Hessian fly also did a good deal of injury, and should the weather be favorable for its development, when the brood emerges from its pupal state early in September much damage to early sown wheat may be anticipated this year. Wheat was housed in excellent condition. The supply of laborers was scarce owing to hay, wheat and barley ripening together, and the work was overtaken only by self-binders and improved machinery.

John McMillan, Hullett, Huron: A large amount of fall wheat was killed in the spring, but what was left did well up to a short time of ripening, when the warm weather brought it on too quickly. The grain is small in the berry, and not more than two-thirds of a crop of what was left in the spring.

G. E. Cresswell, Tuckersmith, Huron: From causes detailed in former reports, the fall wheat crop was very patchy even in the best fields. The crop being slim, the great heat of the summer caused rust to a large extent, more especially on low grounds. In Stanley township, lying between Tuckersmith and the lake (Huron), the crop is very fine, there being very little winter-killing, and cutting commenced about the 1st of July. Tuckersmith wheat fields will not yield more than one-half of those in Stanley, where cutting commenced about the 9th of July. The self-binder is one of the greatest blessings ever bestowed on the agriculturist.

John Burgess, Turnberry, Huron: The crop is poor, having been injured by spring frosts, as well as by rust and some kind of insect in the lower joint of straw. All is harvested and some threshed, and it is yielding a poor sample and a small crop, although saved in good order. Labor-saving machinery is largely used.

M. McDonald, Kinloss, Bruce: Fall wheat looked well when the snow left, but dwindled fast away through April, and it rusted some. The quality is only second-class. Cutting began about the 16th of July, and the crop is secured in good condition. The labor supply was plentiful, and so were self-binders. The old reaper has taken a back seat with the cradle; its days are numbered.

Thomas Welsh, Huron, Bruce: Fall wheat is much below the average, although it wintered very well. The spring, though mild, was too dry, there being no rain from the middle of April till June, and the heat and moisture of the latter month caused a too rapid growth. Much of the crop is rusted, but even if there was no rust it is not as well filled as usual.

George Buskin, Artemesia, Grey: Fall wheat was injured last spring when the snow was leaving by ice forming. It left the wheat patchy, but none was ploughed up. It was somewhat injured by rust. The grain is of medium quality and will yield about 15 bushels per acre. The labor supply was sufficient Several self-binders have come in for this harvest.

George Binnie, Glenelg, Grey: Fall wheat did not fulfil the promise it gave early in the season. The frosts of April weakened it and the dry spell following very materially thinned it out. Some of it rusted slightly, which injured the sample, but on the whole it was very fair. Cutting was chiefly done during the last week of July and the first week of August.

John Booth, Normanby, Grey: The fall wheat did not do so well as it promised in spring. The May drouth had an injurious effect on it, killing out the weak plants, making the fields patchy. The quality of the wheat is good, as it was saved without a shower. A small black insect worked in the lower joint of the straw, cutting it almost off, and it falls down. This pest is getting worse every year.

John Lennox, Innisfil, Simcoe: Fall wheat was very badly rusted on low land and slightly rusted on high ground. There was some damage by the Hessian fly. The best field in this locality was threshed on Saturday; yield, 23 bushels per acre. There was plenty of straw for 40 bushels. Cutting commenced about the 18th July.

George Sneath, Vespra, Simcoe: Fall wheat is a short crop, consequent on being badly winter-killed and the grain being shrunken, not from rust but from ripening prematurely. The crop was harvested from the 20th to the end of July.

Wm. Dawson, Williams West, Middlesex: Fall wheat looked beautiful after the snow left. Then very severe frosty weather ensued and all without a good top was badly damaged. Hessian fly affected some last fall. Some parties use salt with good effect as a destroyer of the insect. Rust struck the late and weak crop. Some parties sowed fall wheat on extra well summer fallowed fields, with poor results, supposed to be caused by being left too mellow and by insects. All was harvested by August 6th. Some few had both spring and fall wheat safely housed by August 1st. It was harvested in excellent condition. Average about 15 bushels per acre; a very few had 30, and some 20, but 10 and 12 were more common.

S. P. Zavitz, Lobo, Middlesex: Fall wheat was not much injured since spring, though more rain would have increased the yield. It was affected some by the Hessian fly, and crinkled, but filled fairly well. It was well secured, without rain, but is a light crop. Quality good.

Andrew Robinson, McGillivray, Middlesex; Fall wheat was first injured by the thaw in January. The water lay on the low grounds and before it could get away formed into ice and killed out patches of wheat. The crop was next injured in April by the cold dry frosty winds. It then ripened too soon, the weather being so hot. It was harvested in good condition, but the grain is shrunken a little.

Thomas Baird, Blandford, Oxford: Fall wheat never recovered from the effects of the cold, dry weather we had in the early spring. It never had moisture enough to bring the crop to maturity. Then the hot weather of June and July struck it, causing premature ripening before the heads were properly filled out to the top.

John F. Tribe, Dereham, Oxford: Fall wheat promised a good yield, but ripened too soon. The berry is clean and bright, but small. The crop will average 20 bushels per acre. The grain went into the barn in good condition. Cutting commenced July 12th. Labor in haying and harvest was ample; wages $1 to $1.25. Every farmer has a mower and self-binder, so lots of farmers can do their own work.

Thomas A. Good, Brantford, Brant: There is some very good fall wheat and some very bad. It was hurt a good deal by the winter ice and scorched by the hot weather in the end of June and beginning of July. Some fields were badly hurt with rust, and a few by the Hessian fly. Other fields escaped both. It was best on heavy land and will be about two-thirds of a crop, so far as I can learn. Some was cut on the 3rd and 4th July.

Daniel Burt, Dumfries South, Brant: Fall wheat never looked worse in the spring than it did this year, but it improved some after the fine weather set in and the frost was over.

John Campbell, Blanshard, Perth: Fall wheat generally poor; average yield from 5 to 10 bushels per acre. The excessive hot weather ripened it prematurely, and rust then took hold of it. Cutting commenced about 12th July, and all secured in good order. Most of the crop is now threshed, with the result above stated.

D. McLean, Ellice, Perth: Fall wheat was badly damaged by the cold frosts of April. The injured spots did not recover and the tender plants took the rust early in July. Through premature ripening the berry is not so plump as the farmer would like to see it. It will average about two-thirds of a crop.

John McDonald, Garafraxa W., Wellington: Fall wheat is a poor crop; it does not yield, when threshed, as well as expected. Rust wrought some injury, as did also the dry weather in May.

Thomas McCrae, Guelph, Wellington: Fall wheat was all housed in July, and will be a fair to good crop. Where not killed by frost in the spring, I had over 20 bushels to the acre. Slightly rusted, but not much hurt; in fact, a good sample.

Robert Cromar, Pilkington, Wellington: Fall wheat is almost a failure hereabouts. Some that is threshed is not going over 8 to 10 bushels an acre, caused by winter-killing and rust.

George Risk, Wilmot, Waterloo: Many fields were patchy, supposed to be caused by ice in winter, but I think grubs working in it in the fall might have been the cause. Some fields were also hurt by frost heaving in the spring. Rust has done much injury, every kind of wheat being more or less affected. Cutting was general about the middle of June. The crop was secured in fine order, but as regards quality, some is good, some fair, and some chicken feed. In general it is a poor crop and badly rusted.

Edward Halter, Waterloo, Waterloo: Fall wheat was looking very well with the exception of some spots caused by ice during winter, and promised an average crop, until about the beginning of July, when a

fearful heat set in and almost killed the wheat. Instead of the sap going up to the head and filling out the grain, it came out on the straw and caused a sort of uncommon rust. The quality it light, some below 55 lbs. a bushel; earlier may go from 58 to 60 lbs.

R. Dickson, Luther E., Dufferin: Fall wheat was winter-killed and thin, and the hot weather caused premature ripening.

Robert Gray, Mulmur, Dufferin: Not much fall wheat was raised this season. The grain was considerably injured by rust. Cutting commenced about the 26th of July, in this locality, and the crop was secured in good condition. The labor supply was sufficient here. There are not many self-binders, mostly reapers.

S. Kennedy, Gainsboro, Lincoln: Fall wheat promised very well until the warm weather set in in July There is no rust, but the grain is a little shrunken on account of the intense heat. I don't know of any harm by insects. Cutting began about July 8th, and by the 11th it was general.

James Stull, Grantham, Lincoln: Fall wheat did not get a large top last fall unless sowed early. The Hessian fly did some damage. The berry is quite bright, but small on account of the drouth; most of the wheat ripened within five weeks after heading. Farm hands are scarce and wages high; laborers wanted about two bushels of wheat for a day's work.

John Ireland, Ancaster, Wentworth: Fall wheat suffered from ice in winter, frosts in early spring, and extreme heat in the last of June and first of July. The grain was more or less rusted, causing a small berry and it will be light in weight. Harvesting began about the 12th of July, and the crop was got in in good condition. But for the fine weather, the labor supply would not have been sufficient.

Robert Inksetter, Beverley, Wentworth: Wheat was a good deal killed during winter and spring. The weather was very forcing in May and June, so that it did not stool out well, and then drouth and heat ripened it too soon. Rust also injured it to some extent. It was got in in splendid condition, but the grain will be small. Cutting began about the middle of July; labor plenty.

Thomas Shaw, Binbrook, Wentworth: We have very good straw, but poor turn out of wheat, on account of the drouth and heat. Began cutting about the 12th of July, and it was taken off rapidly, all kinds of grain being cut with binders. Wages per month, $20; per day, $1.

Colin Cameron, Nassagaweya, Halton: The wheat ripened too early, owing to the excessive heat, damaging the grain slightly. The rust was very bad on the late wheat, not leaving half a crop. Some samples are very good, and some very poor. Harvesting is now over (August 12th) and the grain is in good order.

John Husband, Trafalgar, Halton: In this section fall wheat was a fine crop on the ground, and was not damaged to any extent except a small portion which happened to be a little late, which was hurt some by rust; very little injury was done by insects. Cutting began about the second week of July, and made rapid progress, and as there was no bad weather the crop was secured in first-class condition. The grain is good, but the berry is not large, caused by lack of moisture. There was no lack of harvest help.

James H. Newlove, Albion, Peel: Fall wheat was injured with ice lying on it in the spring. It was harvested in first-class condition, but as it had ripened too fast from excessive heat it is consequently somewhat shrunken.

Wm. McKay, Toronto, Peel: The heat ripened the fall wheat too rapidly, and some was injured by a black rust caused by the heat. The crop was harvested in good condition. The grain is small and very hard. Binders are used by nine-tenths of the farmers in this locality.

N. A. Malloy, Vaughan, York: Fall wheat ripened prematurely from drouth and excessive heat, and was also much injured by winter-killing as well as by rust. Cutting began about the 15th of July. The crop was well secured, but it is only of medium quality.

F. C. Sibbald, Georgina, York: One third of the fall wheat was winter-killed; otherwise it is good. Cutting began on the 13th of July, a fortnight earlier than last year. The quality is good, and the crop was well saved.

D. B. Nighswander, Markham, York: Heat and want of rain had a very bad effect on fall wheat. It was also winter-killed, and some of the best fields were badly rusted. Wheat was housed in good condition, but will yield far below the average, and the quality will be fair to poor. Laboring hands were scarce; self-binders are used on nearly every farm.

R. S. Webster, Scott, Ontario: Fall wheat was killed by the late winter frosts to a great extent, but the fields that escaped did well, and will contribute up to 35 and 40 bushels per acre. On the other hand, where it was partially winter-killed and not plowed up, rust had a bad effect. I consider the fall wheat crop a failure in this section.

R. Forsyth, Pickering, Ontario: Fall wheat came on well, and where not badly winter-killed, is well filled. It is not rusted, and was harvested about the second week of July. The labor supply was sufficient, and nearly every farmer has a binder.

Robert Hodge, Clarke, Durham: Fall wheat came out badly in the spring in this section. Very little was sown, but what there was matured too rapidly owing to the heat and dry weather.

W. J. Grandy, Manvers, Durham: Fall wheat was nearly all winter-killed, and some of it was re-sown. Where winter-killed, the grain was considerably rusted, but elsewhere the quality of the berry is good. In general, however, fall wheat is far below an average both in yield and sample.

J. Dunn, Brighton, Northumberland: No injury was done to fall wheat by rain or hail, although much damage was done by spring frosts. It also escaped injury from rust and insects. Cutting began about the 14th of July, and the crop was secured in good condition. There was plenty of help to be had in haying and harvesting, and self-binders are becoming plentiful.

John Williams, Hamilton, Northumberland: Very little fall wheat is sown in this township, but what little there was was badly winter-killed; otherwise it would have been a good crop. The grain was well saved, but it will be of inferior quality. A number of new self-binders have been brought into use this season.

L. P. Hubbs, Hillier, Prince Edward: Not much fall wheat sown. The yield, however, is fair and the quality good. It is all harvested, cutting having begun about the 12th of July. No self-binders are used, as our crops are mainly barley and peas.

Samuel N. Smith, Sophiasburg, Prince Edward: Fall wheat is not much sown with us, but what we did sow was hurt by frost, and on some lands was a perfect failure. There are a few fields that look well, but some are only a half crop. What fall wheat there is, however, is of good quality.

B. C. Lloyd, Camden, Lennox and Addington: Very little fall wheat was sown, but that was badly winter-killed; so much so, that in many cases it was plowed under in spring.

E. R. Sills, Fredericksburg S., Lennox and Addington: This grain, as well as all other grains, was undoubtedly injured by the severe drouth.

R. J. Dunlop, Pittsburg, Frontenac: Fall wheat was but little sown last autumn, and the crop was winter-killed by the accumulation of ice on the fields last spring.

A. F. Bond, Storrington, Frontenac: Fall wheat was badly injured with the ice in the winter, frosts in the spring, and drouth during the summer. Cutting began about the 12th of July, and was all got under cover in good condition. The grain will be shrunken.

John Ferguson, Wolford, Leeds and Grenville: Fall wheat has been a poor crop. It got badly winter-killed, and will not be more than a half yield.

W. J. Ruthven, Crosby S., Leeds and Grenville: Fall wheat was badly winter-killed, but it received no injury from rain, hail, rust or insects, although dry weather may have hurt it somewhat. The crop was not extensive, and was got into the barn in good condition, and the grain is of good quality. Cutting began about the 14th of July.

Wm. Kyle, Williamsburg, Dundas: Grain is nearly all reaped by horse-power, wheat being cut by self-binders and the other grains being taken off chiefly by reapers, as the unbound grain dries more quickly, and the farmers prefer to have it so cut, as they can get it in sooner.

D. Rae, Winchester, Dundas: Fall wheat is not much sown in this township. Some pieces are winter-killed, but on the whole it is good. Cutting began about the first of July, and the grain was housed in splendid condition. Hay loaders are coming into use. A good many binders are also used, but not to the extent they should be.

G. I. Morgan, Osnabruck, Stormont: Fall wheat is not much sown in these parts. Owing to it being badly winter-killed, the crop was mostly plowed up.

James Cattanach, Lancaster, Glengarry: There is less fall wheat sown here every year, as it is so uncertain a crop that any other kind of grain would pay better.

R. Bowden, Cumberland, Russell: Fall wheat will be only half a crop, as it suffered from dry weather. The sample will be poor. Self-binders and labor-saving implements are used by nearly every farmer. Harvest help was plentiful.

R. Serson, Fitzroy, Carleton. Very little fall wheat was grown this season, and that was rusted.

Peter Anderson, McNab, Renfrew: Scarcely any fall wheat is sown in this county.

G. W. White, Lavant, Lanark: Very little fall wheat is raised here, but what there is is good.

N. Heaslip, Bexley, Victoria: Harvesting began on July 14th. The grain is plump and good, but the straw light, the crop having suffered from winter-killing. It will be about half an average crop.

Wm. Cookman, Somerville, Victoria: The yield of fall wheat will be below the average. There are some good samples, and in some places plenty of straw, but in general the crop ripened too fast.

A. R. Kidd, Dummer, Peterboro': The fall wheat was mostly killed by the ice last winter and late frosts this spring, and some of what remained was plowed under. The grain is not as plump as it should be, owing to want of moisture at the time of maturing. It ripened too fast, and as a result will be about second quality.

J. S. Cairnduff, Harvey, Peterboro': Fall wheat was hurt by ice and dry weather, but not by insects. It promised well in the fall, but the spring freezing and thawing, where not sheltered by the forest or by tree planting, caused it to be a light crop. It was all cut in July.

Wm. Armstrong, Otonabee, Peterboro': Fall wheat is better than was expected. It did not fill as plump as might be, but there was no rust. Cutting commenced about the 12th of July, and we got the crop housed in good order. There was a sufficient supply of help, as self-binders supplied the place of manual labor.

John H. Delamere, Lutterworth, Haliburton: There is not any great breadth of fall wheat sown here, but although limited in quantity the quality is excellent.

J. B. Morton, Huntingdon, Hastings: The fall wheat that was allowed to remain improved wonderfully, and although not a full crop, yet it yields better than that sown in spring. Cutting began about the middle of July.

Thomas H. Blanshard, Sidney, Hastings: The favorable weather of May and the early part of June produced a good effect upon the fall wheat, restoring to life much that was partially killed by ice and frost of winter and spring, and the dry, warm weather afterwards brought it on rapidly to maturity. It was saved in good condition, and appears to be of good quality.

J. McDonald, Stephenson, Muskoka: Fall wheat is not grown to any considerable extent in this district.

H. Jackson, Humphrey, Parry Sound: There is but very little fall wheat grown. There has been no injury to the crop, and it has been saved in good condition.

FROM THE NOVEMBER REPORT.

Geo. Little, Sandwich E., Essex: Fall wheat turned out much better than was expected in the spring.

A. Papineau, Rochester, Essex: Fall wheat below the average; damaged by drouth.

James Walker, Dover, Kent: The quality of fall wheat very good; in some cases a little shrunk.

Geo. Green, Chatham, Kent: Fall wheat fair; smooth, bright and hard.

Samuel Maccoll, Dunwich, Elgin: The quality of fall wheat is good, and the shortage in the crop is owing to the rain and thaw of last winter, which formed a slush on the fields, immediately followed by severe frosts, which solidified the semi-liquid surface, thereby smothering the wheat plant by excluding the air.

Geo. A. Marlatt, Bayham, Elgin: Fall wheat in this locality was of a good quality, but a light crop—sixteen bushels to the acre.

O. E. Twiss, Middleton, Norfolk: The quality of fall wheat is excellent, where it was raised on sandy or loamy soil, but where it was raised on heavy clay it is more or less shrunken.

Joseph Martindale, Oneida, Haldimand: Fall wheat a good quality and weighs a pound or two over on the bushel.

John A. Law, Stamford, Welland: Fall wheat a very good sample, but one third short.

J. W. Overholt, Wainfleet, Welland: The quality of fall wheat is very fair—just holding out in weight.

Jas. McClive, Bertie, Welland: I am of opinion that farmers who grow fall wheat largely are making slow progress towards fortune, and if they would turn their attention to dairying they would realize more satisfactory returns, while the land would be rested and decidedly improved.

Joseph H. Patterson, Dawn, Lambton: Wheat, generally, somewhat shrunken from early ripening, but makes good flour.

James Lovell, Brooke, Lambton: Fall wheat has proved to be the best grain crop that we raised this year, although it is considerably below an average crop, both as regards quantity and quality.

John Burgess, Turnberry, Huron: Fall wheat hard and dry, but badly shrunken; it is flouring a great deal better than it looks, being very thin in skin.

Walter Hick, Goderich, Huron: Quality bright but small, some plump, but a good deal of it shrunken on account of the Hessian fly.

James Campbell, Stanley, Huron: The crop of fall wheat was poor this year: quite a lot of straw broke and fell down before the grain got ripe. In general the yield is poor. There are some good samples and some very poor.

James Johnston, Carrick, Bruce: Fall wheat good, but there is a good deal of small grain in it. It weighs well and grinds well.

Peter Clark, Culross, Bruce: On account of the very dry season fall wheat is inferior in quality and short in quantity, in comparison with last year.

E. A. Carver, Albemarle and Amabel, Bruce: Fall wheat is very fair in quality; in quantity, about twelve bushels to the acre.

Wm. Irvine, Bentinck, Grey: The fall wheat is small in the berry, but otherwise very good.

Joseph McArdle, Proton, Grey: Fall wheat was very good. There was not a large acreage sown, but the people are beginning to sow more here now than formerly.

James Robertson, Flos, Simcoe: Fall wheat is small in the berry, but bright and plump.

Basil R. Rowe, Orillia, Simcoe: Quality of fall wheat excellent, and quantity, too, considering the amount winter-killed.

Adam H. Secord, Dorchester N., Middlesex: Fall wheat weighs well. The berry is smaller than usual and rather flinty, caused by drouth.

Richard Gibson, Delaware, Middlesex: Fall wheat gives a generally good sample. The Hessian fly did damage in some fields, and there the grain was small and skrunken.

James G. Petrie, Oxford E., Oxford: Fall wheat is of fair quality. The sample is smaller than usual, but still much of it is of full weight.

F. Malcolm, Blandford, Oxford: Generally speaking, the quality of fall wheat is good, not so very plump, but hard and heavy.

Thos. A. Good, Brantford, Brant: Mostly a fair sample. Some is small and thin, and about ten per cent. shrunken.

John Hodgson, Hibbert, Perth: Fall wheat is as sound as a bell, but it is very small in the berry.

H. McDougall, Guelph, Wellington: The quality of fall wheat on some farms is very good, being plump, sound and bright, while others in the same neighborhood is very poor.

W. H. Stubbs, Peel, Wellington: On account of the severe heat and drouth at the time of ripening the fall wheat in the majority of fields was considerably injured, making the quality, as a rule, below the standard.

Alex. Rannie, Wellesley, Waterloo: Fall wheat was generally a poor turn out per acre, and a great deal of it was very badly rusted.

Christian T. Groh, Waterloo, Waterloo: Fall wheat was the only grain that filled well, and it filled none too well, but the sample is very fair.

James Freebury, Mono, Dufferin: Fall wheat is good in quality but short in quantity.

James Stull, Grantham, Lincoln: Fall wheat was a very light crop. It ripened about ten days ahead of time on account of the severe drouth. The Hessian fly was very hard on the early sown.

Melvin Moyer, Clinton, Lincoln: Fall wheat is of average quality. Some that matured late is a little light and shrunken, but on the whole the quality is good, although the yield is small.

John Bremner, Flamboro' E., Wentworth: Fall wheat is fair in quality, although not up to the standard of former years.

John Shaw, Esquesing, Halton: Fall wheat is a fair sample, but not quite so plump as the sample was last year.

John Campbell, Chinguacousy, Peel: Fall wheat is a fair sample.

Angus Ego, Georgina, York: Fall wheat a poor sample from being winter-killed and from rust.

J. Bartholomew, Whitchurch, York: Fall wheat is of good quality in general, although in some localities it is shrunken a little.

John Lanigan, Mara, Ontario: Fall wheat is of very good quality, and yields a fair average in this township.

Abraham Morris, Cartwright, Durham: Very little fall wheat is sown, but the quality of that raised this season is pretty good.

Jonathan Dunn, Brighton, Northumberland: The quality of fall wheat is only medium, the berry being small, and in some cases shrunken.

W. R. Leavens, Hallowell, Prince Edward: Fall wheat is of good quality, although generally injured by frost last winter.

John Sharp, Ernesttown, Lennox and Addington: Fall wheat was very much injured by the winter and by spring frosts, so that the yield and quality is very poor.

John Hamilton, Hinchinbrook, Frontenac: There is not much fall wheat grown here, but what was saved was very good.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Fall wheat is of good quality, but is not much raised in consequence of being winter-killed.

G. C. Tracy, Williamsburg, Dundas: Light crop; little sown; on the whole a failure, yet the berry fair.

Donald F. McRae, Roxborough, Stormont: Very good what escaped spring frost; very little sown here the last two seasons.

James Cattanach, Lancaster, Glengarry: Fall wheat—quality good but grain small.

John Scott, Goulbourn, Carleton: Fall wheat a failure from being winter-killed.

Benjamin McKeracher, Bathurst, Lanark: Most of the fall wheat was killed in the winter; some odd pieces were left, but it was a poor crop.

John H. Fraser, Drummond, Lanark: Grain good, but very few pieces will average over ten bushels per acre.

John A. Jackson, Eldon, Victoria: The comparatively few fields that survived the spring frosts did well, though in some places a little injured by rust. Grain good quality.

Wm. Cookman, Somerville, Victoria: Fall wheat a fair sample, but a little on the small side.

John Moloney, Douro, Peterborough: Fall wheat yielded well, but generally not a very plump berry.

Alex. Southworth, Cardiff, Haliburton: Very little fall wheat sown, but quality good.

Anson Latta, Thurlow, Hastings: Fall wheat generally good quality.

Joseph Alton, Strong, Parry Sound: Very little fall wheat sown; not as good as last season for quality.

SPRING WHEAT.

The season of 1887 was a rather unfavorable one for spring wheat. The record was that of 1885 repeated, minus the damage from rain and plus severe injury from drouth. Insect pests were numerous, and rather general in their visitations. The midge was reported from lake Huron to Glengarry—doing more damage in the west than in the east, however; the weevil wrought injury, the Hessian fly was not idle, blight and rust badly affected the crop in places, and the drouth was general. It would almost seem as if "the stars in their courses" fought against it, and it is not surprising that the yield per acre for the province was less than three-fourths of the average of the preceding five

years. Happily the greatest damange was in that half of the province west of the counties of Simcoe and Ontario where the acreage given to spring wheat is proportionately small, and growing less. In southern Ontario the opinion was expressed by more than one correspondent that the crop should be given up, as there is little or no chance for it in dry seasons. In the counties of Huron, Bruce, Grey and Simcoe the midge was very hurttul, but the greatest failure of the crop was experienced in the West Midland group, where the average yield per acre was 9 bushels, the yield for Perth averaging only 6 bushels. It was well that the western half of Ontario went largely out of the growing of spring wheat, (the acreage having fallen off considerably over 25 per cent.), and it is likely that a continued decrease in the breadth of land devoted to this crop will be recorded, unless some new variety is produced which can defy drouth and withstand in some measure the attacks of rust and the various insect pests. The bearded kinds did best, especially Wild Goose, while the failure of the bald varieties was general, east and west. From the county of Durham eastward the returns were more reassuring, though still a rather poor crop, until the spring wheat fields of the St. Lawrence were reached, where the crop found its best records for the season. In the six or seven counties lying east of Lanark and Leeds, inclusive, good yields were recorded, and a fair quality of grain reported, which upon test has made good flour. In the West Midland counties rust was reported and slight damage by midge, and a falling off in the yield. In the Northern districts the quality of the spring wheat was good and the yield very fair, though midge and rust were present. Notwithstanding the rust and drouth, the straw was of medium quality, as, owing to the absence of rains at the time of the very early harvest, both it and the grain were saved in as perfect a condition as the reaping knife found them. The following table gives the acreage, total yield and yield per acre of the crop by districts, for the years 1886 and 1887:

Districts.	1887.			1886.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	10,841	114,438	10.6	14,031	204,112	14.5
Lake Huron	28,013	232,171	8.3	46,839	640,290	13.7
Georgian Bay	65,549	668,123	10.2	74,417	1,250,892	16.8
West Midland	59,411	537,955	9.1	90,160	1,287,167	14.3
Lake Ontario	139,339	1,675,723	12.0	152,516	2,715,962	17.8
St. Lawrence and Ottawa	114,130	1,599,293	14.0	122,887	2,152,736	17.5
East Midland	61,031	687,347	11.3	68,689	1,142,845	16.6
Northern Districts	6,507	118,067	18.1	7,926	124,549	15.7
Totals	484,821	5,633,117	11.6	577,465	9,518,553	16.5

The average for the province is shown to be very nearly five bushels per acre less than in 1886, while the total crop is less by nearly 4,000,000 bushels. The average of the Georgian Bay counties was less than in the previous year by 6.8 bushels per acre; and in the Lake Ontario counties by 5.8 bushels. In the latter group the aggregate yield was less than in 1886 by more than 1,000,000 bushels. Compared with the average of the five years 1882-6, the area in crop was less by 169,539 acres, the aggregate yield by 4,896,914 bushels, and the yield per acre by 4.5 bushels.

FROM THE AUGUST REPORT.

Henry Morand, Sandwich E., Essex: Not much spring wheat grown, but what little there was sown is middling, except in some places where there was much black wheat, which made the rest almost unfit to be used.

G. M. Baird, Harwich, Kent: Spring wheat promised well up till the latter part of June, when drouth attacked it, and it ripened prematurely, and is consequently shrunken and a poor sample.

D. McKillop, Aldboro', Elgin : Spring wheat is very inferior. I cannot say what caused such a general sickening of the crop, as in many instances it was hardly worth cutting.

W. W. Wells, Woodhouse, Norfolk : Spring wheat is very poor. The hot, dry weather baked it too soon. It will not average more than six bushels to the acre.

J. R. Martin, Cayuga N., Haldimand : Very little spring wheat grown. It is a complete failure from drouth and excessive heat. It should be given up in southern Ontario.

Wm. Hedges, Walpole, Haldimand ; Spring wheat, like all other grain, has suffered from drouth and heat, and will be light. I have not seen much rust.

L. Buckton, Crowland, Welland : I have seen only one piece of spring wheat, and it was fit only for chicken feed.

John A. Law, Stamford, Welland : Spring wheat is nearly an entire failure. Rust and drouth nearly destroyed it.

Henry Ingram, Enniskillen, Lambton : Spring wheat has suffered more than fall wheat from extreme heat and drouth. The kernel will be very small. Straw was so brittle that it could not be bound by hand.

Jas. Watson, Moore, Lambton : Spring wheat injured by rust and Hessian fly, and in many places almost a complete failure. Some good fields on new land, and where the ground was well cultivated and manured.

A E. Wark, Plympton, Lambton : Spring wheat seems to be played out in this section. The extreme heat prevented it from filling, and the long continued drouth stopped all growth.

Wm. Spence, Grey, Huron : Spring wheat is very poor here ; not over half a crop. Injured by midge and rust.

G. E. Cresswell, Tuckersmith, Huron : A total failure. I fancy the failure of the spring wheat crop of late years arises from the Hessian fly. Most certainly the drouth cannot be blamed for it, for the plant turned yellow in the straw before the dry weather set in. It happens thus every year it fails.

R. B. Fleming, Saugeen, Bruce : A poor sample in general. It is badly damaged by rust and midge ; better on high rolling land where sown early.

John Craig, Amabel, Bruce : Spring wheat is the best here that it has been for ten years, where sown early. Late sown is rusted some.

Geo. Buskin, Artemesia, Grey : Spring wheat had a good crop of straw, but at time of cutting was partly rusted. The grain will be small, which will bring down the yield, but it will make good flour.

J. Shearer, Egremont, Grey : Spring wheat is slightly rusted. The midge and Hessian fly are both present. Although neither has done much damage, altogether they will lessen the yield somewhat.

Jas. Robertson, Nottawasaga, Simcoe : Drouth has injured the grain, leaving it small. Midge has also done great injury.

John Lennox, Innisfil, Simcoe : Very badly rusted, only fit for chicken feed, but there was a big yield of straw.

Wm. Wright, McGillivray, Middlesex : A failure. Some not worth harvesting. The best will scarcely return the seed.

R. A. Brown, Nissouri West, Middlesex : The early sown wheat is above the average. The bearded varieties will be a good crop ; affected by midge somewhat.

Jno. Henderson, Nissouri East, Oxford : Spring wheat is a very poor crop. After it came up the grubs thinned it out ; then the dry weather came on and ripened it too early.

M. & W. Schell, Oxford East, Oxford : A complete failure with but very few exceptions. The growth of straw was light, and the rust was very bad. Fortunately there was not much sown.

A. Freeman, Burford, Brant : There is scarcely any spring wheat grown here, but what there is will not be worth harvesting.

Robt. Beatty, Blanshard, Perth : Spring wheat is very poor. I see very little that will pay for cutting and threshing. The weevil injured it seriously. I do not think it will average over five bushels per acre.

Duncan Stewart, Easthope North, Perth : Very poor ; badly rusted. Almost worthless except the bearded kind, which did a good deal better.

James Cross, Peel, Wellington : Poor ; none but the bearded variety worth anything, and that not good.

Wm. Whitelaw, Guelph, Wellington : Very poor, not more than half a crop, owing to dry weather and the ravages of the midge.

Edward Halter, Waterloo, Waterloo : Not worth cutting, with the exception of one kind of bearded wheat, and even it is not good. A great many farmers did not cut their spring wheat, but let the cattle in on it.

John Cornelius, Garafraxa East, Dufferin : There is a good crop of straw, but the grain is very badly rusted in some places, owing to excessive heat. The midge also injured it some.

Edward Irvine, Grimsby S., Lincoln : What little there was sown was scarcely worth harvesting.

W. B. Rittenhouse, Clinton, Lincoln : Very little spring wheat was sown, and that is poor, owing to the drouth.

George F. Lewis, Saltfleet, Wentworth : There was very little spring wheat grown, and that is very poor.

John Ireland, Ancaster, Wentworth : There was not much grown in this locality, but the few fields I have noticed are good, in both yield and quality of grain, and rather better in appearance than former years. Cutting began about the second of August.

Daniel McFarlane, Nelson, Halton: Spring wheat is not much grown here, and the little we have is not very good.

Wm. Clements, Trafalgar, Halton: Not much spring wheat is sown here. It looks well, but is badly "midged."

W. J. Dods, Caledon, Peel: Spring wheat promised well, but the weather has been too hot and ripened it too soon. A great deal of it will be very small; it is damaged considerably by midge and blight, and in some cases Hessian fly and rust.

Wm. McKay, Toronto, Peel: Spring wheat is a failure; the midge has injured it greatly. Goose wheat, however, has not been so much injured, although the grain is small.

J. Gibson, Markham, York: "Wild Goose" is a fair crop, but other kinds are badly affected by rust and midge.

D. James, Markham, York: Spring wheat ripened so quickly that some people called it withering. Rust hurt much of the late sown, while the midge injured other fields so much that it will not pay for harvesting and threshing. The white-stem maggot injured some fields to a small extent. The straw may make good feed, but the grain is far below the average. It was cut on July 28th.

Angus Ego, Georgina, York: Spring wheat looked well until rust came. Early sown is the better, the late being very little good. We commenced harvesting it about the 1st of August. It is being secured in good condition, but will be a poor sample.

J. H. Birchard, Scott, Ontario: Spring wheat is badly damaged by rust, and there is also some injury by the weevil. It was harvested in good condition. Nearly all the grain is much shrunken.

R. S. Webster, Scott, Ontario: Spring wheat had the finest appearance of the past twenty years up to the 10th of July, when dry, parching weather set in, resulting in premature ripening. There is a heavy crop of straw, but the grain is much shrunken, and will not represent more than half of last year's crop of spring wheat. It was all cut in July.

Samuel Taylor, Mara, Ontario: All my wheat is more or less rusty; I have ten acres worthless from rust, and none of it free. I hear a good many complaints of the same thing in this locality. A great deal of the wheat has the head fallen off.

Robert Colville, Clarke, Durham: Spring wheat is affected by drouth and in many cases injured by weevil. The grain is not plump, but hard, and secured in good condition. Cutting began on the 22nd of July. Labor was sufficient, and binders are used on almost every farm.

W. G. Rundle, Darlington, Durham: Some injury was done to late pieces by rust, and all were more or less affected by dry weather. The crop was secured in good condition.

H. A. Walker, Hope, Durham: Spring wheat varies very much. The weevil injured the crop nearly one-third. The bearded kinds seem to do the best; White Russian rusted. All is harvested and in the barns.

Platt Hinman, Haldimand, Northumberland: Spring wheat is hardly an average crop, although there are some fine pieces. The early sown on well tilled grounds is generally good, but many of the later pieces are thin, having dried and ripened before the kernel was full. It was harvested in good order.

John Williams, Hamilton, Northumberland: Spring wheat suffered to a considerable extent from the Hessian fly and the dry weather, but the sample is pretty fair. A large part of the spring wheat was cut in July.

W. A. Hendrick, Murray, Northumberland: Spring wheat is a good crop, the best it has been in years. It is headed nicely, and turns out well. It received no injury except from the dry weather.

Franklin Jones, Hillier, Prince Edward: Spring wheat ripened prematurely, but otherwise it is good; that is, the straw is very good, although the berry is a little shrunken. The crop is remarkably free from injury by weevil or other insects.

G. N. Rose, Marysburg N., Prince Edward: There is a small crop of spring wheat. The whole trouble is drouth. The straw is light and the grain is generally shrunken.

George Lott, Richmond, Lennox and Addington: Very little grown, and that a bad crop. Affected slightly by insects, and very much by drouth.

A. Ritchie, Storrington, Frontenac: Poor crop, caused by dry weather. The prospects were never better up to June 15th, but no rain came of any account after June 6th.

Robert Anglin, Pittsburg, Frontenac: Spring wheat is only half a crop, and of poor milling quality, and badly rusted.

Isaiah Wright, Augusta, Leeds and Grenville: Very poor; injured by the drouth, and rust also, where not very early sown.

S. Edgar, Kitley, Leeds and Grenville: Will be short in straw, but in good deep land well filled and a good head.

A. Harkness, Matilda, Dundas: A very good growth of straw, but much of it is rusted and has not filled well.

D. Rae, Winchester, Dundas: Badly affected by drouth, and somewhat rusted. The grain will be considerably shrunken.

Robert Vallance, Osnabruck, Stormont: Very good; slightly injured by drouth; ripened rather hurriedly, which will cause some shrinkage in the grain.

D. B. McMillian, Lochiel, Glengarry: Early spring wheat is very good. The grain is small where late sown, on account of the dry weather.

James Surch, Plantagenet S., Prescott: Spring wheat is generally good, though not full to the top of the head.

J. C. Edwards, Clarence, Russell: In some sections it is fairly good, but like everything else, it is injured by drouth and ripened too speedily.

R. Bowden, Cumberland, Russell: Considerable sown, but is rather light. The yield will be small, owing to the dry weather.

Isaac Wilson, March, Carleton: About an average crop. No rust, and very little fly.

T. M. Robertson, Nepean, Carleton: Will be a fair crop. Somewhat hurt by the hot weather in July, which ripened it too quickly, and it did not fill well. The midge injured it to a small extent.

William Hawkins, jr., Stafford, Renfrew: Very good. Some few fields have been more or less injured by the heavy rain after seeding.

H. A. Schultz, Sebastopol, Renfrew: Will be an average crop. Rust appeared in some places, but did not injure the crop much.

G. Hamilton, Ramsay, Lanark: Some little injury was done by the extreme heat, which caused premature ripening. Rust also injured it to some extent.

William Brownlee, Dalhousie, Lanark: A poor crop. Hurt by heat and drouth, and slightly affected by rust.

John Stewart, Verulam, Victoria: Drouth and rust have done great harm. Little fit for sale.

John Westlake, Mariposa, Victoria: Had a fine appearance two weeks before cutting, but the dry weather caused it to ripen prematurely; hence the grain is small and shrunken.

P. Robinson, Smith, Peterboro': Will be an average crop. As the hot weather ripened the grain too rapidly, it will be rather small. All saved in good condition.

D. Anderson, Anstruther, Peterboro': Spring wheat is damaged some by rust, and the grain is small and shrunken. The July drouth and the hot weather helped to make it a failure.

D. Kavanagh, Dungannon, Hastings: Spring wheat is very light. The straw is short and can scarcely be cradled on account of there being no rain in July.

C. Robertson, Cardwell, Muskoka: Very good; harvested in good condition.

J. H. Osborne, Stephenson, Muskoka, Looks well, and promises a yield far above the average.

Peter McDonald, Machar, Parry Sound: Fair crop. About 12 bushels per acre. Quality of grain very good.

J. H. Johnston, Sandfield, Algoma: Spring wheat here has received no injury.

FROM THE NOVEMBER REPORT.

Edward Nash, Mersea, Essex: Spring wheat good, but rather light in weight.

Thomas H. Coatsworth, Harwich, Kent: Spring wheat not much grown in this section; grain shrunken.

John Haggan, Malahide, Elgin: Very little spring wheat sown; quality poor.

W. W. Wells, Woodhouse, Norfolk: Spring wheat generally poor, shrunken and light; 45 lbs. to the bushel.

Chas. Walker, Cayuga, Haldimand: Spring wheat poor, fit only for chicken feed.

Arthur Simenton, Seneca, Haldimand: Spring wheat shrunken and poor in quality, think we will have to give it up.

W. S. Howell, Sombra, Lambton: Spring wheat is very badly shrunken, and weight about 55 lbs. to the bushel.

James Lovell, Brooke, Lambton: Spring wheat was not worth harvesting.

John Morrison, McKillop, Huron: Spring wheat. Very little sown and most of it not worth threshing.

Robert Currie, W. Wawanosh, Huron: Spring wheat was worse than fall; it was rusted and shrunken with the hot dry weather before harvesting; much of it here not worth threshing.

G. Edwin Cresswell, Tuckersmith, Huron: Spring wheat miserable, could hardly be worse.

Thomas Fraser, Huron, Bruce: Spring wheat is very much shrunken with heat and rust. Goose wheat excepted.

E. A. Carver, Albemarle and N. Amabel: Spring wheat very poor; badly rusted throughout; about six bushels to the acre on the average. A neighbour, however, who sowed some very early in the spring in a field where his orchard stands, succeeded in turning out 15 bushels to the acre of spring wheat of very fair quality.

Walter Hartman, St. Vincent, Grey: Spring wheat very irregular. Some good, some badly damaged by midge and rust.

James Shearer, Egremont, Grey: Rather poor; injured by midge, rust and Hessian fly.

Alex. McPherson, Proton, Grey Spring wheat is inferior in quality and small in quantity.

James Farney, Flos, Simcoe: Spring wheat only fit for hen feed and will not pay for threshing; I saw some left uncut as it was not worth cutting.

Brain Cornell, Delaware, Middlesex: Very little spring wheat grown, and quality very poor.

S. C. Tuttle, East Oxford, Oxford: Not much spring wheat raised in this township, but this year it was a failure on account of drouth.

F. Malcolm, Innerkip, Oxford: In some instances spring wheat did not return seed; poor in quality.

Henry Key, Oakland, Brant: Spring wheat is under size in sample, but a fine color.

Thomas A. Good, Brantford, Brant: Very little spring wheat sown, and what there is is very bad.

Thomas Page, Wallace, Perth: Spring wheat not much grown, and what there is is a complete failure.

F. R. Hamilton, Hibbert, Perth: Spring wheat was a total failure; in many instances will never be threshed.

W. J. Mulloy, Peel, Wellington: Ninety per cent of the spring wheat is screenings.

John Strang, West Garafraxa, Wellington: Spring wheat in general is very poor, some new kinds have been introduced which may prove better.

W. H. Stubbs, Peel, Wellington: Spring wheat is almost a total failure, only about one half being worth threshing, on account of the severe heat along with the rust, which began its work in many cases before it was all in head.

W. C. Smith, Wilmot, Waterloo: Spring wheat rusted and badly injured by the midge.

Christian T. Groh, Waterloo, Waterloo: Spring wheat a total failure; badly shrunken; not grown very extensively.

John Cornelius, Garafraxa E., Dufferin: Spring wheat middling; it was injured to some extent by rust and midge, and the continued heat and showery weather made it grow too rapidly.

Isaac A. Merritt, Grimsby S., Lincoln: Spring wheat a light crop and much shrunken.

W. H. Van Duzer Grimsby, N., Lincoln: Spring wheat is a fair sample of chicken feed.

John Weylie, sr., Glanford, Wentworth: Spring wheat was a failure with the exception of the Goose variety, which seems to be proof against rust.

W. C. Ingelhart, Trafalgar, Halton: Spring wheat badly shrunken—not properly matured; owing to the severe drouth it ripened too quickly.

N. V. Watson, Chinguacousy, Peel: Spring wheat was very light owing to drouth—about ten bushels to the acre.

John Beasley, King, York: Spring wheat very poor; injured by midge and ripened too soon. Wild Goose is a fair crop.

Angus Ego, Georgina, York: Spring wheat a poor turn out and poor sample, from being early and badly rusted; lots of straw.

Ralph Forsyth, Pickering, Ontario: Spring wheat is generally a failure; sample mostly poor; badly affected by drouth.

Samuel Taylor, Mara, Ontario: Spring wheat generally poor and rusted on stiff soil; better sample on higher lands.

Robert Colville, Clarke, Durham: Rather below a medium, but hard.

Geo. Kennedy, sr., Haldimand, Northumberland: Spring wheat is hardly an average crop; plenty of straw and heads long enough, but the berry was somewhat small owing to the dry weather.

Luther Platt, Athol, Prince Edward: Spring wheat inferior in quality and very poor in yield.

P. W. Miller, Kaladar, Lennox and Addington: Spring wheat hard and bright, but somewhat shrunken; the dry weather hastened the ripening.

Ira B. Hudgins, Richmond, Lennox and Addington: Spring wheat a very good sample; poor yield, and not much sown.

Robt. Anglin, Pittsburg, Frontenac: Spring wheat sprouted, small and very inferior.

Gideon Fairbairn, Edwardsburg, Leeds and Grenville: Spring wheat below the average; straw rusted and grain shrunken.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Spring wheat almost an entire failure—cause dry weather and also the weevil; quality very poor.

James Collison, Matilda, Dundas: Spring wheat badly hurt with drouth; shrunk badly; not more than 15 bushels to the acre.

Donald F. McRae, Roxborough, Stormont: Early sown spring wheat was generally good, but rather small grain.

Robert Vallance, Osnabruck, Stormont: Spring wheat fair; hurt some by drouth towards ripening time, causing a little shrinkage.

James Cattanach, Lancaster, Glengarry: Spring wheat is sound, but owing to the drouth it did not fill out.

James Wylie, Hawkesbury E., Prescott: Spring wheat never stooled out; the heads were short and the berry small. The chief complaints are of drouth and rust.

James Surch, Plantagenet S., Prescott: Spring wheat good sample, and an average of, say, 13 bushels to the acre.

Lewis Morton, Goulbourn, Carleton: Quality sound, but berry in some cases somewhat shrunken by the great drouth, and in some cases by rust caused by cold nights and hot days.

John O'Callaghan, North Gower, Carleton: Spring wheat was hurt by the hot weather and rust and some fly; the grain is small.

Wm. Hawkins, jr., Stafford, Renfrew: The dry weather injured this crop, yet I think it is turning out better than was expected, close on an average crop.

R. Harper, Elmsley N., Lanark: Good in quality, though somewhat small in the berry.

John A. Jackson, Eldon, Victoria: Spring wheat suffered much from scorching hot weather in July.

Thomas Tellford, Ennismore, Peterboro': Colorado wheat good. White Russian very poor.

J. M. Drummond, Otonabee, Peterboro': Some kinds of spring wheat very good, such as Colorado, an early bearded wheat; White Russian rusted; yield poor, sample chicken feed.

Alex. Southworth, Cardiff, Haliburton: Spring wheat good quality, but small yield.

Geo. Monro, Tyendinaga, Hastings: Small in grain and somewhat hurt by weevil.

Henry W. Gill, Watt, Muskoka: Spring wheat fair, affected a little by drouth.

A. Wiancko, Morrison, Muskoka: Spring wheat injured by the midge so badly that some fields have not even been reaped. Our farmers here intend to give up growing any for some years.

James McDonald, Stephenson, Muskoka: Spring wheat good but deficient in bulk.

Joseph Alton, Strong, Parry Sound: Spring wheat not as good as last season; berry small on account of ripening too soon and some of the heads not filled up.

Robert F. Ogle, Campbell, Algoma: No injury by rust; slightly shrunk by heat. We had good weather on Manitoulin Island during the summer; nice warm showers. Late crops injured by frost.

BARLEY.

The barley crop as a whole has been very tersely and truthfully described by the phase used by a good many correspondents—"bright, but light." The harvest generally was two weeks earlier than usual, and the grain had by just that period too short a time to mature properly. As a consequence its weight was below the average, the estimates of correspondents varying from 40 to 48 lbs. to the bushel. With the exception of a very few fields, the crop was saved without a drop of rain, and the color was almost universally bright. In Wolfe Island and two or three townships in the East Midland and River counties there was some discoloration, which in some instances was due to the grain standing too long after it was ripe. The crop succeeded best in the Lake Huron and Georgian Bay counties, where the early sown barley turned out very well, while later sown was somewhat below the average. May rains caused some injury in Lambton. In the Northern districts, too, barley was quite a satisfactory crop, though there it is not extensively grown. In almost all the other counties some correspondents speak favorably of the crop, but the majority of the reports were distinctly unfavorable. In the counties of Durham, Northumberland and Prince Edward, the principal barley-growing district, the yield was very unsatisfactory. A correspondent in Prince Edward spoke of the grain as being of the "shoe-peg" character, and a Durham farmer described it as "hungry." Rust affected the late barley to a considerable extent in Bruce and Perth, and complaints of the same enemy come from Elgin, York, Stormont and Carleton. Two or three reports mentioned damage by the Hessian fly and worms. Wherever the barley was sown early it was comparatively heavy in straw and also yielded much better in grain. The grain threshed out much better than was expected at the time of harvest, and the good quality of the sample made up for the lack of weight, of which almost general complaint had been

made. A comparison of the crop for the seasons of 1886 and 1887 is presented in the following table by groups of counties :

Districts.	1887.			1886.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush per acre.
Lake Erie	35,742	719,372	20.1	35,551	898,038	25.3
Lake Huron	60,932	1,425,914	23.4	53,682	1,502,186	28.0
Georgian Bay	58,050	1,308,045	22.5	54,012	1,423,407	26.4
West Midland	132,247	3,148,152	23.8	117,720	3,328,576	28.3
Lake Ontario	310,215	6,997,828	22.6	294,743	7,822,742	26.5
St. Lawrence and Ottawa	86,740	1,875,608	21.6	87,917	2,208,651	25.1
East Midland	81,873	1,623,751	19.8	89,748	2,273,180	25.3
Northern Districts	1,547	36,160	23.4	2,405	55,498	23.1
Totals	767,346	17,134,830	22.3	735,778	19,512,278	26.5

The area in crop was nearly 40,000 acres more than the average of the five years 1882-6, but the yield was 2,437,500 bushels less than the average of those years, and the yield per acre was 4.6 bushels less.

FROM THE AUGUST REPORT.

George Leak, Rochester, Essex: Barley is a fair crop. The grain is small, but saved in good condition. The sample is bright.

C. Coatsworth, Romney, Kent: The crop is good and well secured. Most of the barley had matured before the drouth affected it. The sample will be good and the crop over average.

John Bishop, Orford, Kent: Very little barley was grown here, and what was grown is of an inferior quality. Some black barley has turned out well.

D. Campbell, Dunwich, Elgin: Barley was not much grown here. What there is is good, being well matured before the excessively dry hot weather set in.

W. Clark, Aldborough, Elgin: Barley is about half a crop. It was damaged by rust and drouth.

C. H. Kitchen, Townsend, Norfolk: Barley is a very fair crop. It came on early and was injured by drouth least of all the spring crops, and with fine weather at harvest it was secured in good condition.

W. W. Wells, Woodhouse, Norfolk: Barley is an uneven crop. Where it was sown early it is very good, but later sown is very poor. It will probably be the best of our grains this year, but is nothing to brag of; say 12 bushels per acre.

F. A. Nelles, Seneca, Haldimand: The sample is bright, but the yield is very small and the grain light.

John A. Law, Stamford, Welland: Barley is one-third short and a poor sample. It will not average 40 lbs. to the bushel. The drouth hurt it.

A. E. Wark, Plympton, Lambton: Barley is a miserable crop, short in straw and small in grain. The color is good, the crop being saved in good condition. Commenced cutting about July 15th.

W. S. Howell, Sombra, Lambton: The spring drouth kept barley back considerably, but the early summer rains gave it a good growth. Cutting began July 8th. The crop ripened too fast and crinkled down rapidly, making it rather hard to gather.

D. S. Robertson, Plympton, Lambton: Barley is a very poor crop. It was first scalded by the excessive rain in the month of May and afterwards scorched and prematurely ripened by the heat and drouth.

Wm. Spence, Grey, Huron: Barley is a good crop and very good sample. Most of it is harvested and was put into the barn in good condition.

A. Doupe, Usborne, Huron: A considerable quantity of barley was sown last spring. The early sown will yield 10 to 15 bushels per acre more than the late sown, which did not come up for several weeks on account of the dry season. The early grain will yield 40 bushels per acre. There was not much Mensury barley sown, as buyers do not want it.

Wm. Welsh, Huron, Bruce: Early barley filled well, but the late was much rusted and will consequently yield less. The crop was secured in beautiful condition.

John Douglass, Arran, Bruce: Barley is not an average crop and will not be a good sample, as it did not come up well in the spring, the clay land being so stiff and dry.

A. Stephen, Sullivan, Grey: Early sown barley is poor. What was sown about the middle of May is good, plump and bright.

George Binnie, Glenelg, Grey: Barley is a very good crop, although late sown is short in the straw. It has been secured in good order and will sample well.

Walter Scott, Nottawasaga, Simcoe: Barley is a good crop, of fair quality, and has been secured mostly without rain.

C. Cooke, Tecumseth, Simcoe: Barley was very much affected by the drouth and the great heat. It will be very light in weight.

W. Dawson, Williams West, Middlesex: An insect worked in some of the fields. Some used salt, which stopped its ravages. It also stiffened the straw, which crinkled badly. Barley is a grand color, very little of it being dark, but the grain is shrunken and the yield below the average.

Richard Jolliffe, Dorchester North, Middlesex: Very few pieces will go over 15 bushels per acre, and some not over five. The berry is very thin and light.

F. Malcolm, Blandford, Oxford: Barley will be of good color but poor sample. The hot weather in the first and second weeks of July almost cooked it. We started cutting July 15th, and the crop was saved in good condition.

A. Freeman, Burford, Brant: Barley came up well and looked fine on the ground. It would have been a good crop if we had had rain at filling time.

James Spence, Blanshard, Perth: Barley was prematurely ripened and slightly rusted. Cutting began about July 20th. The grain is only about half size.

Alex. Martin, Downie, Perth: Barley that was early sown has done pretty well. It is of good color, but small in the kernel.

James Cross, Peel, Wellington: Barley that was sown early is a fair crop here, but the exceedingly hot dry weather hastened it too fast. It is a nice bright sample, but small and light.

Duncan McFarlane, Puslinch, Wellington: Barley was a very fine crop, bright in color but light in weight, except the very early sown. Cutting commenced on July 12th.

Geo. Risk, Wilmot, Waterloo: Bright in color and light in weight. It ripened too quickly.

John Cornelius, Garafraxa East, Dufferin: Barley is not the best in quality. It was injured by storms and hot weather. It was harvested in good condition.

Robt. Gray, Mulmur, Dufferin: Barley is a fair crop, secured in good condition. The grain is a little small.

W. H. VanDuzer, Grimsby North, Lincoln: Barley was secured bright enough, but very light in weight. It ripened too quickly.

John Secord, Grantham, Lincoln: Barley has done poorly, except now and then a field that was very early. On the whole it is a poor crop and will not weigh over 40 lbs. to the bushel, owing to the hot, dry weather.

John Blasdell, Beverley, Wentworth: Barley was affected by the drouth, and the berry is small and light. It was harvested in good condition.

Daniel McLaren, Nelson, Halton: Barley is a little below an average crop, beautifully bright, but deficient in weight. Late sown barley was very poor.

W. T. Patullo, Caledon, Peel: Barley will generally rank No. 2. It will be light, but generally very good in color.

John Sinclair, Chinguacousy, Peel: Barley is an average crop of straw and housed in fine condition. The grain is bright in color, but small and shrunken from the heat and drouth.

John Beasley, King, York: Early sown barley is very fair, but late sown is poor and light.

John McMillan, Whitchurch, York: Barley is of good color, but poorly filled. There is a good crop of straw. Nearly all the barley grown here is the old white. There is very little Russian white grown.

D. James, Markham, York: Barley is light in weight. It was slightly rusted, but the grain is bright in color.

Angus Ego, Georgina, York: Barley is a good yield and was secured well. On account of being lodged, a good deal of it will be colored.

John Foy, Scugog, Ontario: Barley is small and light in weight. The harvest commenced fully two weeks earlier than it would have done but for the hot weather.

Thomas Cain, Scott, Ontario: Where sown early, barley is a fair crop, with good grain. Where sown late, the grain is mostly small and deficient in weight from three to five pounds per bushel. It was mostly secured in good condition as to color.

W. A. Peters, Hope, Durham: Barley will be termed by the buyers as "hungry." Yield, 15 to 25 bushels per acre.

Thomas Syer, Manvers, Durham: Barley ripened very early and prematurely. Early sown is the best. The grain will be small and mostly discolored, there being a shower of rain at the time of cutting.

E. J. Honey, Percy, Northumberland: Barley was injured very much by the drouth. The straw is generally short, though in some fields it is heavy enough. The grain is small and light, caused by the drouth. I commenced cutting on July 11th which is very early. Considerable barley was discolored by the rain of July 21st. The rest will be bright.

Walter Riddell, Hamilton, Northumberland: Barley was injured by the heat and drouth and ripened prematurely. There was some Hessian fly in it. It was all harvested in good condition. Sample light, color fair.

George Kennedy, sr., Haldimand, Northumberland: There is plenty of straw, but the berry is small and not plump, as it ripened too quickly. It is all as bright as a silver dollar. There is a good deal of barley in this district.

James Benson, Ameliasburg, Prince Edward: Barley, one of the staple products of the township, suffered much from the drouth, and the probabilities are that the township, as a whole, will not give much more than half a crop.

L. P. Hubbs, Hillier, Prince Edward: Barley is about half a crop, and in some places an entire failure. Most of it was saved bright in color, but will be light in weight.

Luther Platt, Athol, Prince Edward: Barley is an average crop, and early sown pieces will give an average yield. The sample is somewhat under weight, but very bright in color.

James Cooper, Marysburg South, Prince Edward: Barley is a very poor crop. Some fields were pastured. The injury was caused by drouth.

C. R. Allison, Fredericksburg South, Lennox and Addington: Barley is quite a failure on account of the continued dry hot weather. A large proportion was saved without any rain and is very bright, but the grain is light. I think very little will go 48 lbs. to the bushel.

George Lott, Richmond, Lennox and Addington: Barley cutting commenced about July 8th. The yield is small and the grain is badly shrunken. It was generally harvested bright.

B. C. Lloyd, Camden E., Lennox and Addington: Barley is the best crop we have, but is not an average crop. The grain is light, but the berry bright. There is not very much straw.

M. Spoor, Wolfe Island, Frontenac: The appearance on the field was very good, but when harvested it proves to be very light and badly colored. Harvesting commenced July 25th.

Robert Anglin, Pittsburg, Frontenac: Barley is a very poor crop. The grain is small, dark and shrunken.

John Simpson, Kingston, Frontenac: Barley will be light, except the early sown and that on high rich soil. I consider the barley harvest commenced at least ten days earlier than usual.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Barley is not so good as last year, being very short and not well headed. Harvesting commenced August 1st.

S. Edgar, Kitley, Leeds and Grenville: Barley has been an abundant crop, having been well matured before the drouth set in. It was all secured in good condition.

S. Chalmers, Wolford, Leeds and Grenville: Barley is a good crop, about the best we have in this section. It was saved in fine condition.

J. P. Fox, Winchester, Dundas: Barley is not very well filled and is rusted somewhat, but was saved in splendid condition. It is the best barley we have had for years.

D. F. McRae, Roxborough, Stormont: Early sown barley promises a good yield. Late sown is rather dark in color and light in weight.

G. I. Morgan, Osnabruck, Stormont: The two-rowed barley is somewhat shrunken with the great heat but appears bright. The four-rowed is badly blighted, will not be over one-fourth of a crop, and that not fit for market.

James Cattanach, Lancaster, Glengarry: Barley would have been a good crop but for the heat. The grain is bright and nice, but very light.

John Kyle, Hawkesbury East, Prescott: There is a considerable quantity of barley sown about here. Some of the farmers say it is pretty good. I think it has stood the drouth better than other cereals.

R. Bowden, Cumberland, Russell: Barley will turn out well, but there was not much sown.

Isaac Wilson, March, Carleton: Barley is about an average crop, and was saved in first rate condition.

R. Serson, Fitzroy, Carleton: Except in the early sown the berry is small. The grain was somewhat rusted.

James Findlay, Westmeath, Renfrew: Began cutting about July 13th. The crop ripened rather fast, and the berry is small. It is about all in, and the quality is good.

G. Hamilton, Ramsay, Lanark: Barley is very good and sustained no serious injury by the weather. Cutting commenced about July 20th.

Wm. McGarry, Drummond, Lanark: Barley is not quite up to the average. There was too much wet when it was sown.

John F. Cummings, Mariposa, Victoria: Barley is small in kernel, owing to the dry weather. It is generally good in color but light in weight.

N. Heaslip, Bexley, Victoria: Barley was injured by the dry, hot weather. The grain is smaller than usual. It was harvested in excellent condition.

H. Spence, Dummer, Peterboro': Barley is a medium crop, but will be a small sample and light weight. It is all harvested.

Wm. Armstrong, Otonabee, Peterboro': Barley is very small and light. It was browned by the hot sun, although housed without getting any rain.

S. Kettle, Glamorgan, Haliburton: Barley is generally sown late here, and now looks worse than anything else grown, owing to the drouth.

J. C. Hanley, Tyendinaga, Hastings: Barley is better than any other crop here. It was saved very well, but it is light in weight.

Thos. Steele, Sidney, Hastings: Barley has plenty of straw and good heads, but is light in grain. Cutting commenced about July 11th. About two-thirds of the grain is bright and the rest partly discolored.

J. McDonald, Stephenson, Muskoka: Barley is very good. Harvesting commenced about the 28th July. The grain has been saved in good condition.

Thomas Butler, Croft and Hagerman, Parry Sound: Barley is light through drouth, but has a good berry.

O. Duross, Oliver, Algoma: Barley is good, having received no injury. Some was cut about August 1st, but some is not ripe yet.

FROM THE NOVEMBER REPORT.

A. Papineau, Rochester, Essex: Barley is of good quality, but very little is raised here.

George Green, Chatham, Kent: Barley is bright but light in weight.

L. M. Brown, Dorchester S., Elgin: Barley is bright in color but light in weight.

Wm. W. Wells, Woodhouse, Norfolk: Barley is very light but very bright and dry.

John H. Best, Walpole, Haldimand: Barley has a very bright color, but is light in weight.

J. W. Overholt, Wainfleet, Welland: Barley is of excellent quality in every respect but weight, as it falls short four or five lbs. to the bushel. The drouth accounts for this.

James Watson, Moore, Lambton: Barley is somewhat light, but the color is bright and clear.

John Burgess, Turnberry, Huron: Barley is hard and dry. It is light in color for this township, and is very light in weight.

Edwin Cresswell, Tuckersmith, Huron: Barley is bright in color, but light in the grain. On the whole, however, a good average crop.

Peter Corrigan, Kinloss, Bruce: Barley is a fair crop, small in kernel, but a good sample.

Thos. Fraser, Huron, Bruce: Barley is good and sound, very small, 45 lbs. to the bushel being about the average. It never was brighter.

George Buskin, Artemesia, Grey: Most of the barley is of good color, but much of it is short in weight, while part of it will go the 48 lbs. to the bushel. However I have been selling some which by the tester gives a weight of 58 lbs. to the bushel.

Malcolm Cameron, Glenelg, Grey: Barley is very light and the grain shrunk, but of good bright color.

W. Scott, Nottawasaga, Simcoe: Barley was mostly secured without rain, but some is very light in weight.

Samuel Frazer, Tay, Simcoe: Barley, of which there is not much sown, was broken down considerably by a summer storm, and though of good quality, I should say it is under an average crop.

Wm. Wright, McGillivray, Middlesex: A nice bright sample, but grain light.

Malcolm Campbell, Ekfrid, Middlesex: We have but a little barley; what is raised is shrunken, but bright.

D. S. Butterfield, Norwich N., Oxford: Barley is a light crop, but a fair light sample.

Robt. Leake, Oxford E., Oxford: Barley has a large grain, very bright but not well filled.

Thomas Mitchell, Dumfries S., Brant: Barley is of fine color, and hardly up to the average yield per acre, though for a wonder it is up to the mark per bushel by the tester.

Wm. Courtice, Fullarton, Perth: Barley was injured by the heat, and consequently ripened too soon. The kernel is small, but for the most part of bright color.

F. R. Hamilton, Hibbert, Perth: Barley was a fine crop of straw and promised a good yield, but owing to the severe drouth it is light in weight, but of fine color.

Duncan McFarlane, Puslinch, Wellington: Early barley is very good, but late barley is light.

W. H. Stubbs, Peel, Wellington: Barley was severely injured by the drouth just at the period of ripening, causing it to mature so quickly that it generally is about 3 lbs. short of the standard in weight.

W. C. Smith, Wilmot, Waterloo: Barley is of good color, but rather light in weight, except early sown which ran over weight.

Geo. Bailey, Malancthon, Dufferin: Barley is of good color. It is light in weight in some parts of the township, but in others it is of fair average weight.

Melvin Moyer, Clinton, Lincoln: Barley was poor in most sections of the township. On some of the best farms there was some good barley, but in general it was somewhat shrunken and of light weight.

Thomas Choate, Glanford, Wentworth: Barley light in weight, but fair in color.

Colin Cameron, Nassagaweya, Halton: Barley very bright but light in weight, averaging from 45 to 48 lbs. per bushel.

Peter McLeod, Chinguacousy, Peel: There is an excellent crop of barley here although light in weight, as the excessive heat caused the grain to ripen too rapidly. The earlier sown barley was the best.

John Beasley, King, York: Early sown good and heavy, but later sown light. All of a good color.

Angus Ego, Georgina, York : Barley showed a good turn out and a very good sample. None is extra bright, but it weighs well.

J. Bartholomew, Whitchurch, York : Barley bright, but lacking in weight.

Alex. McGregor, Reach, Ontario : Barley where sown early is a fairly good crop, a great quantity of it being of good color and weight.

James Parr, Cartwright, Durham : Barley has turned out much better than was expected at the time of harvesting.

W. A. Peters, Hope, Durham : The barley is very variable, some weighing 42 lbs. to the bushel, and some as high as 52. I think it is owing to the soil, high sandy loam being light, while heavy clay gives a plumper berry. Some are of opinion that salt is beneficial, owing to its keeping the soil cool and moist.

C. A. Mallory, Percy, Northumberland : Early sown barley on loamy soil is bright and heavy ; late sown and on heavy soil is a small crop and light weight.

Franklin Jones, Hillier, Prince Edward : The quality of barley varies more than usual. The early sown is generally a good sample as to weight and of fair yield ; late sown, or that on shallow soil, is inferior and light in weight.

James Benson, Ameliasburg, Prince Edward : Barley is about a half crop. It is a good sample as to color, but in parts of the township is badly shrunken.

Fred. Membury, Adolphustown, Lennox and Addington : Barley is good, being bright, although rather light in weight.

Thos. Briggs, Kingston, Frontenac : Barley has turned out better than expected, although it is rather light and the straw is short.

Gideon Fairbairn, Edwardsburg, Leeds and Grenville : Barley is an average crop, though somewhat dark in color.

G. D. Dixon, Matilda, Dundas : Barley is of good color but light in weight.

James Cattanach, Lancaster, Glengarry : Barley is a very light crop, but of good color.

Joseph Kyle, Hawkesbury E., Prescott : Barley appears to have withstood the drouth better than other cereals.

R. Serson, Fitzroy, Carleton : Barley is light, in many instances not coming up to the standard weight, but it is of good color.

John Whelan, Brudenell and Lyndoch, Renfrew : There is very little barley sown. The grain is good in quality, but in yield is below the average.

Reuben Stedman, Drummond, Lanark : Owing to the drouth the barley is small in grain and will not weigh well, but otherwise is of good quality.

Wm. Cookman, Somerville, Victoria : Barley dried up too quickly. The sample is of good color, but light in the grain.

Thos. Tellford, Ennismore, Peterboro' : Barley is a fine light sample, but scarcely will go the full weight.

S. Kettle, Glamorgan, Haliburton : Barley is very lean, but of good color.

Anson Latta, Thurlow, Hastings : Barley is good in color, but light in weight.

A. Wiancko, Morrison, Muskoka : There is very little barley sown in this district, but what there is is good

Joseph Alton, Strong, Parry Sound : Barley is small ; not filled up on account of drouth. Barley sown about the middle of the season did the best.

OATS.

Oats shared in the general decline in product, the decrease amounting to about 20 per cent. on the average yield per acre for the preceding five years and nearly 5,500,000 bushels as compared with the average total yield of the province for the same period. This loss was attributed almost wholly to the drouth, for none of the cereals are freer from insect pests than oats. Grasshoppers did slight damage in some counties, and rust was complained of in the interior, although not to any serious extent. A few instances of smut are reported among the black varieties, and rust was generally more severe upon them than upon white oats. The complaints of injury by the drouth were so general as to be practically unanimous. Oats thrive where there is considerable moisture either in the soil or in the atmosphere, and a hot, dry season is the bane of the crop. Thus it is that on moist lands or in those counties more favored with summer showers, a good return was recorded, and early sown fields which got the benefit of the first rains of June also made a fair showing ; but late sown fields, which experienced little else than drouth, and those on high, dry land, were very light in yield, in some cases the grain having ripened in so

immature a condition as to give little more than the hull. In the western peninsula the reports were favorable as to the length and quality of the straw, but in the central and eastern portions of the province the straw was short. Good yields were reported from Essex, Kent, Huron, Bruce, Perth, Dufferin and Peel in the west, and from Dundas and Russell in the east, as well as from the northern districts, Algoma reporting over 41 bushels to the acre. The oat harvest was exceedingly early, the crop, with the exception of the very late varieties, having been placed in the barn in good condition by the end of the first week of August. A comparative table by districts for the years 1886 and 1887 follows :

Districts.	1887.			1886.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Lake Erie	171,977	5,346,520	31.1	154,489	6,054,368	39.2
Lake Huron	180,795	5,934,446	32.8	169,422	6,178,239	36.5
Georgian Bay	157,822	4,513,089	28.6	155,153	5,456,633	35.2
West Midland	349,528	11,267,375	32.2	324,325	12,437,130	38.3
Lake Ontario	289,874	8,395,202	29.0	281,915	10,400,299	36.9
St. Lawrence and Ottawa	394,250	10,792,952	27.4	400,751	13,518,446	33.7
East Midland	119,789	3,018,376	25.2	118,716	4,070,223	34.3
Northern Districts	18,428	580,141	31.5	17,130	550,270	32.1
Totals	1,682,463	49,848,101	29.6	1,621,901	58,665,608	36.2

Compared with the average of the five years 1882-6, the area in crop is greater by 191,809 acres, while the aggregate yield is less by 5,485,292 bushels, and the average yield per acre less by 7.5 bushels. In the Lake Ontario, St. Lawrence and Ottawa and East Midland counties the aggregate yield was less than the average of five preceding years by over 4,000,000 bushels.

FROM THE AUGUST REPORT.

C. W. Hind, Mersea, Essex: We have straw enough for 65 or 70 bushels of oats, but on account of the heat and drouth not yielding more than 35 or 40 bushels per acre, and the grain is very light. The crop is all secured in good condition, and much of it is threshed.

Henry Morand, Sandwich E., Essex: Oats are not what we expected about a month ago. The yield is not turning out as it ought to be for the straw, and the quality is very light—poor weight. The cause is the drouth; we had no rain, and no dew for many nights, when the time came to fill.

G. M. Baird, Harwich, Kent: Oats showed for a more than average crop, and will be a good yield, but will be light grain.

C. Coatsworth, Rommey, Kent: A large acreage of oats was sown, but the drouth has materially injured the crop. Thirty to thirty-five bushels will be about the average, and the grain will be far inferior to last year's. It is nearly all harvested.

D. McKillop, Aldboro', Elgin: Oats are very light, particularly late sown. The grain will be light in weight, as it ripened too quickly on account of the hot, dry weather.

Samuel Maccoll, Dunwich, Elgin: In the growing season the promise of a large crop of oats was never better, but the intense heat ripened it too suddenly, and consequently the grain is light. The crop is secured at this date (Aug. 9th), when we should be beginning to cut it.

John Ostrander, Middleton, Norfolk: Oats are a light crop on account of the drouth; will not average more than a-half or two-thirds crop at most.

W. W. Wells, Woodhouse, Norfolk: Oats are very good where they occupy early and well tilled soils; but later sown, and all on poor soils, are not long enough to cut with the reaper, and are poor generally. Altogether the crop will be about 20 bushels to the acre.

A. Simonton, Seneca, Haldimand: A light crop, and small grain, light in color; the poorest crop in 30 years. On high, old land it never got fairly started for want of moisture. We thought our soil was good for oats, but it failed this time.

L. Buckton, Crowland, Welland: About one-half the oats did not grow, the spring was so wet; and then the dry weather set in. Grasshoppers have cut the late oats very badly. The crop was got in in good condition, but is light in the grain. Cutting began on July 28th.

J. H. Patterson, Dawn, Lambton: Early oats may be considered a fair crop. Later sown are very light, and very late sown are very little more than empty hulls, having ripened before filling.

B. B. Smart, Sarnia, Lambton: I have seen some very fine fields where put in early on stubble, and have seen some fields on sod hardly worth cutting. Oats will be lighter in grain than last year, on account of the hot weather.

John Hislop, Grey, Huron: Oats seem a good crop, although there are pieces that have nothing but husks, especially the late oats.

A. Doupe, Usborne, Huron: Oats are a splendid crop, and will yield about 50 bushels an acre. Welcome and Egyptian have been sown in large quantities.

G. E. Cresswell, Tuckersmith, Huron: The oat loves a moist, temperate clime. The scorching weather prevailing during July has reversed these conditions, and the late sown oats are poor, light and rusted. Early sown oats, and even those sown later on lands naturally moist, are a fine, average crop. Maturing early, they to a large extent defied the excessive heat of July.

Wm. Welsh, Huron, Bruce: Some kinds are badly rusted. White Russian and White Australian seem to withstand the rust better than most other kinds.

Thomas Inglis, Carrick, Bruce: Oats are a fine crop to look at while growing. The crop is heavy in the straw, but will not yield so well, on account of the excessive heat while ripening. Early oats are bright, but late are badly rusted.

M. McDonald, Kinloss, Bruce: I never saw as fine a looking oat crop as was in this section about the middle of July, but the extreme heat and a little rust brought them down a few degrees. There never was so great a supply of hay and oats in this section.

George Binnie, Glenelg, Grey: Oats are an excellent crop, the best we have had for a number of years. Early sown are the best, as usual. Egyptian oats give the best yield.

John Morice, Normandy, Grey: Early sown oats will be about an average crop; later sown are showing signs of rust, and are being too rapidly forced forward. A great deal of the early sown oats was cut in the last week of July.

A. Stephen, Sullivan, Grey: Early sown oats are good, but with late sown the straw is short and the grain like chaff. Oats will be a light crop in this township.

George Cowan, Innisfil, Simcoe: Oats are a good crop, especially the early sown. The grain will be lighter than usual; it dried too fast.

Walter Scott, Nottawasaga, Simcoe: Oats are a fair, medium crop, not heavy, however. It was too hot for them, and they ripened too quickly.

George Sneath, Vespra, Simcoe: The grain is light in early sown oats, and late sown is scarcely worth anything. The grasshoppers are cutting nearly all the grains off the stalk.

Richard Jolliffe, Dorchester N., Middlesex: Oats will be little over half a crop with straw badly rusted. Very few fields will produce 30 bushels to the acre.

Wm. Black, Westminster, Middlesex: Oats had a splendid appearance in the beginning of summer, but the dry and hot season ripened them too fast, not giving them time to fill, and making it the earliest harvest we have on record.

Wm. Dawson, Williams W., Middlesex: Early oats headed well, but late oats are struck with rust; it has been too dry. Had the season continued favorable, the oat crop would have been magnificent. The grain is light and below an average quantity. The harvest was nearly all done by the 12th of August.

F. Malcolm, Blandford, Oxford: Oats are an excellent crop, with the exception that the drouth affected the sample. Some farmers claim to have a yield of from 50 to 60 bushels an acre. The grain will be lighter than usual, but the straw is good and there is lots of it. The late oats are affected by rust.

John F. Tribe, Dereham, Oxford: The straw is very short and not over half filled, and the grain was very much shrunken. There was no time for them to grow and fill out.

James G. Pettit, Oxford E., Oxford: Oats are a lighter crop than usual. I have heard a few complain of smut, but so far as I can learn it is confined to the black varieties.

Thomas A. Good, Brantford, Brant: Oats have plenty of straw as a rule, but they have been hurt by heat and rust. They are very light when sown at all late. Early sown is a fair crop, and has done best on heavy and loamy soils. Cutting began about the 25th of July.

Alex. Martin, Downie, Perth: Oats have straw for 70 bushels to the acre, but the kernel is small and I do not think it will go over 30 bushels.

D. McLean, Ellice, Perth: Oats are rather short in the straw but well headed. A great portion of it suffered from rust, and the almost tropical heat of July was too much for it. The grain will be small and very dry. Nearly all of it is housed in fine order.

Wm. Whitelaw, Guelph, Wellington: It is not easy to give a fair estimate of oats. There are some very fair crops, and some very much injured by rust, but in general where there is a fair crop it is light in weight.

Edward Halter, Waterloo, Waterloo: Oats stood up splendidly, and if not injured so severely by the great heat some fields would have yielded 60 or 70 bushels an acre. Late sown, and that on heavy, low soil is hardly worth cutting, as there is nothing in it but the shell. New Zealand oats yielded a good average crop.

R. Dickson, Luther E., Dufferin: Oats are very good. There is plenty of straw, but it may be a little small in the grain.

W. H. VanDuzer, Grimsby N., Lincoln: Oats are a light crop, taken altogether. Many turned their cattle into the fields of late oats and pastured them rather than cut the grain.

Robert Shearer, Niagara, Lincoln: A good deal of oats was cut in July and cutting is about over. Those who have threshed are disappointed in the yield. There are a great many empty hulls; the season was too quick for oats

John Ireland, Ancaster, Wentworth: Early sown was not so much affected by the heat and drouth as the later sown, which are badly rusted, especially after sod. The heads are only partially filled, and the growth appears to have been stopped when only nicely out of the shoot blade. The grain will be very poor in quality.

Colin Cameron, Nassagaweya, Halton: Oats ripened about the 1st of August. Early sown fields are not so bad, but late oats are useless, the dry weather and heat causing the head to remain partly in the shoot blade.

John Campbell, Chinguacousy, Peel: Oats will be a fair crop where sown early. The late oats will be light in weight, and some will be badly rusted.

A. Forster, Markham, York: Oats were ripened too soon by the high temperature. Late sown and black varieties rusted a good deal. The cutting began about the 21st of July, and it was housed in good condition, but light.

John Beasley, King, York: Many black oats, especially the late sown, are rusted, but there is a splendid crop of white oats, although short in straw.

Samuel Taylor, Mara, Ontario: A number of fields are so short that they can be cut only with a scythe or cradle, and then raked together. It will be a very light crop.

James H. Birchard, Scott, Ontario: Oats in early places are very good, but the later sown is hurt by rust, and drouth has caused premature ripening. All that is housed is in splendid condition.

W. A. Peters, Hope, Durham: Early sown oats on good land will turn a great amount of straw, although the grain will be light, while the late sown, even on good land, will do little in either straw or grain, as some of it did not head out.

James Roberts, Alnwick, Northumberland: Early sown oats are a fair crop, but late sown are very poor.

G. C. Hurlburt, Marysburg N., Prince Edward: Oats will average very good where sown early, but in some sections will not be worth threshing. The crop will be very light in the straw.

P. W. Miller, Kaladar, Lennox and Addington: Oats are a failure on high grounds, but have had some success on low grounds. Late sown will be an average crop.

R. J. Dunlop, Pittsburg, Frontenac: Oats are generally short in the straw, and will be light in weight. Late sown, especially, will be poor in quality.

Thos. McDowell, South Gower, Leeds and Grenville: Oats will be a poor crop, except some pieces which were early sown. They were injured first by rust and then prematurely ripened by the dry, hot weather, which lasted a long time. Being the staple crop in this section, farmers will feel the loss.

A. Harkness, Matilda, Dundas: This is the main crop of this section. It is very heavy on the ground, but the quality generally is good, though injured in some places by rust. It promised well early in the season, but the hot dry weather forced the plants too rapidly. Cutting began about the 1st of August

Robt. Vallance, Osnabruck, Stormont: Oats will be a very good crop, although the dry weather hurried the maturing and may affect the weight of the grain somewhat.

D. B. McMillan, Lochiel, Glengarry: Oats are a very good crop, especially early sown.

Joseph Kyle, Hawkesbury E., Prescott: Oats are the staple in this locality. They have grown as tall as in other seasons, but for lack of moisture have not filled up. I am afraid they will be far below the average.

Wm. Doyle, Osgoode, Carleton: Oats are better than last year, although not as heavy a crop as farmers expected a month ago. The warm weather hastened it to maturity before it had time to fill.

Ralph Lett, Wilberforce, Renfrew: Oats are not so good as last year, but up to the average of preceding years. They ripened too fast to fill. They were also injured by a worm which cut the stem at the ground in the spring.

G. Hamilton, Ramsay, Lanark: On light land the straw is very short, and the grain is not well filled, and it is almost a failure; but on heavy, rich land a fair crop, injured slightly by the rust. Cutting began in the first week of August.

John Westlake, Mariposa, Victoria: Early oats will be a good crop, but late oats ripened prematurely.

J. S. Cairnduff, Harvey, Peterboro': Oats are short in straw, but will turn out better and yield more than the other grains. They are mostly all cut and housed in good condition.

H. Spence, Dummer, Peterboro': Oats are very light. The straw is so short that many of the farmers are not trying to bind them, but are putting them in loose.

D. Kavanagh, Dungannon, Hastings: Oats are light. The straw is very short; in many places it is not more than a foot high, and will have to be mowed.

George Monro, Tyendinaga, Hastings: Oats that were sown early and on deep soil are very good, but late sown are very poor.

Fred N. Toye, Draper, Muskoka: The oat crop will be about an average. The grain is rather light having ripened prematurely, owing to drouth. Harvesting began about the first of the month and is still in progress. Labor is rather scarce.

Joseph Alton, Strong, Parry Sound: Oats will be very good. Some have been cut. The late oats also look well.

J. H. Johnston, Sandfield, Algoma: Oats promise a large yield. Cutting will begin in about a week from this date (Aug. 1st).

FROM THE NOVEMBER REPORT.

Edward Nash, Mersea, Essex: Early sown were good, but late sown were light.

Thomas F. Routledge, Orford, Kent: I never saw oats so light.

Wm. Clark, Aldborough, Elgin; Oats a little light, though good for the season.

Shelden Ward, Malahide, Elgin: Sample bright, but light in weight; mine will not weigh 20 lbs. to the bushel.

W. W. Wells, Woodhouse, Norfolk: Oats poor—not weighing more than 27 lbs. per bushel.

Arthur Simenton, Seneca, Haldimand: Oats poor crop, and light in weight; the drouth "played hob" with them.

Duncan Schooley, Bertie, Welland: Very light in weight and yield.

W. S. Howell, Sombra, Lambton: Generally light; early sown pretty fair, but late oats are very light indeed.

Alex. E. Wark, Plympton, Lambton: The quality of oats is miserable. I believe there was more nourishment in one bushel last year than in two this year.

Alex. McEwen, Hay, Huron: Oats are a very good crop, but will not come up to weight as formerly.

John Morrison, McKillop, Huron: Early oats good; late very poor and light, on account of drouth and hot weather.

G. Edwin Cresswell, Tuckersmith, Huron: Early sown oats a fair crop; late sown oats badly rusted; grain miserably light. Threshers report cases where the yield was not more than 10 or 15 bushels to the acre.

W. G. Ritchie, Greenock, Bruce: Early oats are good, but late oats were considerably retarded in growth by the drouth and the grain badly injured by rust.

Wm. Welsh, Huron, Bruce: Oats are light; great drouth when near ripening, and rust the causes; grasshoppers also stripped them badly.

John Morice, Normanby, Grey: Oats good sample, but rather light.

Malcolm Cameron, Glenelg, Grey: Oats good, weigh from 38 to 40 lbs. per bushel.

Basil R. Rowe, Orillia, Simcoe: Oats are sound like all other grain this year, but imperfectly filled and light. Small average per acre, but large acreage.

W. D. Stanley, Biddulph, Middlesex: Oats light; yield small—or much less than expected.

Wm. Jamieson, Westminster, Middlesex: Oats in general light, although some very good samples; yield, one-third below an average.

D. R. Calder, Nissouri East, Oxford: Rust affected some fields of oats that were sown on sod turned up in the spring.

John Sheehan, Norwich North, Oxford: Oats light; about 25 bushels to the acre; cause—rust and drouth.

Thomas Mitchell, Dumfries South, Brant: Fine quality of straw, but grain very light.

Wm. Courtice, Fullarton, Perth: Oats ripened rather too fast, and are rather light.

Thomas Moffat, Logan, Perth: Oats average quantity—quality light; badly rusted and seriously damaged thereby, and also for want of rain.

W. B. Freeborn, Mornington, Perth: Black oats rusted badly; crop in general light.

J. A. Brandon, Maryborough, Wellington: White oats good; black poor—injured by grasshoppers and drouth.

Edward Halter, Waterloo, Waterloo: Oats are mostly all light, weighing from 25 to 30 lbs. and some less.

Alex. Rannie, Wellesley, Waterloo: The black oats were badly rusted and poor; the white were very good.

John Short, Luther E., Dufferin: Oats above the average, and of a good quality.

James R. R. Secord, Grantham, Lincoln: Very light and poor yield; rusted and burnt with sun.

Melvin Moyer, Clinton, Lincoln: Oats sown early on fall-ploughed land got a good start before the drouth set in and were very fair, but I think that more than half the oat yield of the township this year was of poor quality, though fair yield.

T. A. Walker, Ancaster, Wentworth: Oats very uneven; some very fair and some like chaff.

Peter McLeod, Chinguacousy, Peel: Oats are light in weight and far below the average.

A. Forster, Markham, York: Dry and well harvested, but much lighter than last year.

John Beasley, King, York: Black oats light; white good and heavy.

John Foy, Scugog, Ontario: Early sown not so bad, but late sown scarcely worth threshing.

Luther Platt, Athol, Prince Edward: Oats nearly a failure both in weight and yield.

P. W. Miller, Kaladar, Lennox and Addington: Oats started fairly in spring, but the growth was checked by the dry hot weather; result—a great many light oats; the rest of fair quality.

M. Spoor, Wolfe Island, Frontenac: Oats quite inferior—about three-fourths of a crop.

John C. Stafford, Leeds and Lansdowne Rear, Leeds and Grenville: Oats an average crop, but hurt by drouth in some localities.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Straw very short, but the grain is very good; an average crop.

Donald F. McRae, Roxborough, Stormont: Early sown fair, but late hardly worth threshing.

Lewis Morton, Goulbourn, Carleton: Small in the grain but weigh pretty well, as the hull is thin and the kernel sound and hard.

John Whelan, Brudenell and Lyndoch, Renfrew: Oats not more than half a crop in bulk and grain light.

A. F. Stewart, Beckwith, Lanark: Oats that were sown early are pretty good; late sown light.

J. S. Cairnduff, Harvey, Peterborough: Straw short, but grain turned out well.

A. R. Kidd, Dummer, Peterborough: About half a crop; lack of moisture seriously affected the oat crop throughout the season.

S. Kettle, Glamorgan, Haliburton: Oats inferior to last year; many light ones.

James McDonald, Stephenson, Muskoka: Sample very good; about one-fourth below an average in yield.

RYE.

The cultivation of rye is yearly growing more unpopular with farmers, and the area is rapidly decreasing. The area under rye in 1887 was 68,362 acres, against an average of 124,575 acres for each of the five years 1882-6; while the yield was only 894,887 bushels, against an average for the preceding five years of 2,102,453 bushels. The lowness of the market for rye, together with the comparatively small yield even under the best conditions, and the tendency of this grain—from its ability, if planted too deeply, to retain its vitality dormant in the soil for years and spring up on a suitable opportunity—to mix with other grains and spread over the farm, combine to make it undesirable for general cultivation. In the season of 1887 rye had the advantage of being an early crop, and was farther advanced than other grains before the effects of the drouth began to be felt—a circumstance which operated somewhat in its favor. Still the reports show that rye was considerably injured by the drouth, and that the yield was short. The grain is more or less shrunken, and the estimated yield does not reach one-half the average of the past five years. The following table gives acreage and yield for the two years 1886 and 1887:

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	10,675	133,503	12.5	8,905	137,841	15.5
Lake Huron	619	10,215	16.5	584	12,422	21.3
Georgian Bay	1,889	31,670	16.8	1,225	19,726	16.1
West Midland	4,300	59,238	13.8	2,582	51,358	19.9
Lake Ontario	22,020	266,154	12.1	21,874	317,094	14.5
St. Lawrence and Ottawa	16,032	227,114	14.2	18,173	333 404	18.2
East Midland	12,339	158,807	12.9	13,776	222,000	16.1
Northern Districts	488	8,186	16 8	660	12,617	19.1
Totals	68,362	894,887	13.1	67,779	1,106,462	16. 3

The greatest failure occurred in the eastern portion of the province, where rye is chiefly grown, and over the whole province the yield was 3.8 bushels less than the average of the five years 1882-6.

FROM THE AUGUST REPORT.

Henry Morand, Sandwich East, Essex: About one-half of a crop. The grain is quite plump.

J. W. Howey, Bayham, Elgin: Rye was about three-quarters of a crop, and was secured in good condition.

E. M. Crysler, Charlotteville, Norfolk: Not so well filled as some years, but a fine crop.

W. W. Wells, Woodhouse, Norfolk: Rye, like wheat, was "sun-killed," and is poor, yielding about ten bushels per acre.

W. S. Howell, Sombra, Lambton: I know of none raised this year. Through inattention on the part of farmers some rye has got amongst the fall wheat and increases quite rapidly, and grows thriftily.

James Latter, Collingwood, Grey: A good crop, but not much grown.

John Lennox, Innisfil, Simcoe: But little rye is grown here, but it is a fairly good crop.

A. Freeman, Burford, Brant: Rye, where grown, will be a fair average crop.

Henry Liersch, Wilmot, Waterloo: Rye is light in grain. It ripened too early on account of the drouth

John Secord, Grantham, Lincoln: Very little grown here. Where it was grown the crop was middling.

Thos. Shaw, Binbrook, Wentworth: A poor crop of grain, but very good straw

G. E. Mowbray, Whitby East, Ontario: Scarcely any sown. What we have is good—a full crop.

W. Windatt, Darlington, Durham: Injured by ice last winter in spots, but a fair crop generally.

Jas. Brock, Cavan, Durham: Rye is the best crop in this part. It seems to be filled well.

E. J. Honey, Percy, Northumberland: Rye is below the average, but there is not much grown in this neighborhood.

Geo. Kennedy, Haldimand, Northumberland: What rye there was sown came through the winter well, and is a fair crop.

Samuel N. Smith, Sophiasburg, Prince Edward: What was sown on good soil did very well, but the farmers here do not care to raise it, thinking that there is no money in it at the best; and that it is hard on the land.

Geo. Lott, Richmond, Lennox: Injured by frost and to some extent by drouth, but harvested in good condition.

J. B. Wilson, Lansdowne Front, Leeds and Grenville: None raised here. We have learned to utilize our land and time in a better way than by raising rye. It is a crop that will fill the barn, but not the purse.

John O'Callaghan, Gower North, Carleton: The grain is small, owing to hot weather at ripening.

H. A. Schultz, Sebastopol, Renfrew: Rye has been a full crop, equal to that of last year.

John McLeland, Darlington, Lanark: Not much sown. Seems to be declining in favor with farmers here.

Wm. Armstrong, Otonabee, Peterboro': Not much grown here, but what there is is very small.

A. Coulter, Tyendinaga, Hastings: Not nearly so good as in former years.

F. N. Toye, Draper, Muskoka: Not so much grown here as formerly, but what there is has turned ou well.

Joseph Alton, Strong, Parry Sound: Hardly any sown here, as the people have got tired of it.

FROM THE NOVEMBER REPORT.

Wm. Clark, Aldborough, Elgin: Rye is of good quality and yield.

O. E. Twiss, Middleton, Norfolk: Rye is of medium yield and has a very small berry.

John A. Law, Stamford, Welland: Rye is of good quality, but very little is raised.

Jasper Martin, Medonte, Simcoe: Rye is an average crop, but very little is grown.

Jas. A. Glen, Westminster, Middlesex: No rye grown except for fodder in this part of the township.

Christian T. Groh, Waterloo, Waterloo: Rye is shrunken badly, but still is coming out fairly well.

Wm. Windatt, Darlington, Durham: Rye is of good quality, but the kernel is small.

C. A. Mallory, Percy, Northumberland: Very little rye was sown. The crop is light, but the sample is fair.

W. R. Leavens, Hallowell, Prince Edward: Rye is very good, but it is little sown in the township.

David James Walker, Storrington, Frontenac: Rye has not done well. Only a small percentage escaped winter killing, and what remained is only middling.

John Edgar, Kitley, Leeds and Grenville: Not much rye raised here, but the quality is poor.

Wm. Selkirk, Petewawa, Renfrew: Rye is of good quality, but not over sixty per cent. of last season.

John Moloney, Douro, Peterborough: Rye is light in straw and shrunken in berry.

George Monro, Tyendinaga, Hastings: Rye is small in grain, and not more than half a crop.

PEASE.

The condition of the pease crop at harvest varied very much even in the same district, under different circumstances of soil, situation, cultivation and time of sowing. This crop was, of course, more or less injured by the prevailing drouth, but on the whole there were larger areas from which good reports came of pease than of wheat. Wherever the seed was sown early, and on good soil, the crop made progress sufficient to cover the ground and in a measure retain the moisture before the severe drouth set in, while what was sown later, and on poorer soil, grew sparsely and did not afford shade to the roots of the plants. This seems to be the explanation of the extremely variable reports that were received from the same localities. Probably two-thirds of the area in pease may be ranked as fair, with only a few localities where a really first-class crop, or above the average, is reported. In the remaining area there was almost an entire failure, live stock having in many cases been turned in to feed off the crop without harvesting. There was little injury from insect pests; the wire-worm and the pea-bug were only occasionally mentioned. The general result of the drouth was to shorten the yield by preventing the pods from developing in number and size to the average extent. November reports were not quite so favorable regarding the condition of the crop. There were complaints that, owing to the intense heat before cutting, the pease had got so hard in the pod that they split too freely in the threshing. Mention was made of the fact, however, that the straw would likely make good fodder. The estimated yield is nearly the same as the average of the five years 1882-6, but it is 3,870,402 bushels less than that of 1886. But then it must be borne in mind that the area has been largely increased during the past three or four years, as in consequence of the disappearance of the pea-bug farmers have been encouraged to go more generally into pea-growing than during the long period in which the bug prevailed. In 1882 the area in crop was only 560,770 acres, while for 1887 it was 726,756, or an increase of 165,986 acres. The following table compares the crops of 1886 and 1887:

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	79,461	969,539	12.2	71,755	1,588,950	22.1
Lake Huron	89,254	1,858,891	20.8	86,412	2,072,939	24.0
Georgian Bay	78,354	1,509,630	19.3	80,811	1,875,540	23.2
West Midland	149,023	2,784,218	18.7	141,349	3,483,392	24.6
Lake Ontario	176,734	2,580,318	14.6	160,444	3,655,754	22.8
St. Lawrence and Ottawa	90,324	1,481,519	16.4	99,645	1,976,831	19.8
East Midland	55,682	782,732	14.1	56,033	1,238,273	22.1
Northern Districts	7,924	206,485	26.1	7,487	152,655	20.4
Totals	726,756	12,173,332	16.8	703,936	16,043,734	22.8

The average breadth of the five years 1882-6 was 604,897 acres, and the average yield per acre was 21.6 bushels; the yield of 1887 consequently fell below the average of the previous five years by 4.8 bushels per acre.

FROM THE AUGUST REPORT.

Geo. Leak, Rochester, Essex: A medium crop, but very much damaged by pea-bugs.

Jno. Bishop, Orford, Kent: Early sown the best, but the best is not half a crop. Some late pieces are not worth pulling.

Geo. Green, Chatham, Kent: Very good in this district, and a large breadth sown.

John Haggan, Malahide, Elgin : Pease fair where early sown ; where sown late a failure.

J. O. Campbell, Windham, Norfolk : Pease are almost a total failure. Many fields were cut for fodder, as they ripened before the pods were formed.

V. Honsberger, Cayuga South, Haldimand : Where pease were sown early on fall ploughing the crop is medium ; on spring ploughing, very light.

F. A. Hutt, Stamford, Welland : Very poor crop. Owing to dry weather, did not blossom, and consequently did not form pods.

A. Childs, Dawn, Welland : Pease are middling, but not equal to last season. There are but few bugs.

James Lovell, Brooke, Lambton : Have stood the drouth better than other grain crops, and will be a fair crop.

Wm. Richmond, Morris, Huron : Pease are splendid. They will not be very large, as they ripened too quickly.

Ed. Gaunt, Wawanosh West, Huron : Pease were never a better crop. The great complaint is "too much straw."

M. McDonald, Kinloss, Bruce : A good crop, of good quality, well secured, and no bugs.

David Saunders, Sarawak, Grey : Straw short, but well loaded.

Geo. Cowan, Innisfil, Simcoe : Not a big crop. There is plenty of straw, but the pods are few.

W. T. Galloway, Adelaide, Middlesex : The straw is good, but the grain is rather small.

Jas. Alexander, Ekfrid, Middlesex : Short in the straw, but grain of good quality.

Jno. F. Tribe, Dereham, Oxford : A very poor crop. Looked very well in June, but the weather was too dry and hot for them to fill, and the vines were parched up and completely killed.

A. Freeman, Burford, Brant : Pease are about one-half of a crop.

Jno. Campbell, Blanshard, Perth : Pease are a fair crop, with no sign of the bug.

Duncan Stewart, Easthope North, Perth : A very promising crop when blossoming, but small in grain now, and pods not well filled.

C. J. McMillan, Erin, Wellington : A very poor crop, and yield very light.

Wm. Brown, Guelph, Wellington : Probably the best crop of the season.

Jno. Gillespie, Dumfries North, Waterloo : Pease are generally a small crop.

Robt. Gray, Mulmur, Dufferin : A moderate crop. Ripened too quickly.

John Secord, Grantham, Lincoln : Pease are quite a failure. Not more than half a crop, if they will be even that.

Robt. Inksetter, Beverley, Wentworth : A poor crop. The heat killed the blossoms.

Thos. Shaw, Binbrook, Wentworth : A fair crop. Did not fill out very well.

Colin Cameron, Nassagaweya, Halton : Pease are the worst crop of all. The blossoms dried up with the heat, leaving scarcely any pods.

Wm. Kersey, Toronto Gore, Peel : An abundance of straw, but very little grain.

F. C. Sibbald, Georgina, York : Promised well at first. Pods were abundant, but the pease are small owing to the heat ripening them too quickly. Probably three-fourths of a crop.

R. Forsyth, Pickering, Ontario : Some fields very good ; others about half a crop. There is plenty of straw.

Thomas Cain, Scott, Ontario : A very poor crop in most places. The large variety of pease appear to be the better crop.

James Parr, Cartwright, Durham : A short crop, and the grain small ; the effect of premature ripening.

James Roberts, Alnwick, Northumberland : They seem to have suffered more than anything else from the drouth. The crop will be very poor.

Luther Platt, Athol, Prince Edward : Early varieties a good sample, and average yield. Late varieties not more than half a crop.

C. R. Allison, Fredericksburg South, Lennox and Addington : Pease are a short crop and poorly loaded on account of hot, dry weather.

R. J. Dunlop, Pittsburg, Frontenac : Pease will not be near an average yield. They were seriously affected by the hot dry weather when in blossom.

John Ferguson, Wolford, Leeds and Grenville : Pease are on the whole the best crop here where sown early.

Wm. Kyle, Williamsburg, Dundas : Good, and fully an average. As they are generally the first crop sown in the spring they were consequently well out of reach of the dry weather.

James Cattanach, Lancaster, Glengarry : Pease are a good crop, where sown with the drill. Where sown broadcast they were not so good, as the grain lying near the surface failed to grow.

J. E. Craig, Gower North, Carleton : Pease are about an average crop.

Ralph Lett, Wilberforce, Renfrew : A favorable year for pease.

B. McKeracher, Bathurst, Lanark : Pease never were so poor a crop in this part. I think it was the drouth.

Wm. Ramsay, Mariposa, Victoria: Early sown pease are very good, but the later crop is damaged by drouth.

F. Birdsall, Asphodel, Peterboro': In most places not over half a crop, on account of the dry weather. White marrowfat, where sown, came out the best.

Charles R. Stewart, Dysart, Haliburton: Injured by drouth. About two-thirds of an average crop.

J. B. Morton, Huntington Hastings: Yield will be small, owing to drouth. In fact some fields will not pay for harvesting.

C. Robertson, Cardwell, Muskoka: Pease are very good, and free from bugs.

Thomas Butler, Croft and Hagerman, Parry Sound: The leading crop here in quality and yield.

FROM THE NOVEMBER REPORT.

Chas. E. Weldon, Colchester N., Essex: Less pease than usual. They were badly affected by the pea-bug. It is a drawback to peas in this part, as they cannot be kept over winter on account of the bug.

F. B. Stewart, Raleigh, Kent: Pease are heavy in straw, but are not threshing well.

J. F. Rogers, Dunwich, Elgin: Pease are mostly good, but some are only about half-sized, caused by the dry weather.

W. W. Wells, Woodhouse, Norfolk: Pease are good, plump and well-filled, weighing 65 lbs. to the bushel.

James Morrison, Walsingham, Norfolk: Pease dried right up, and the drouth was too much for them on sand, and in some places it was as bad on the clay.

Andrew Turnbull, Seneca, Haldimand: Early sown pease were a fine crop, but late sown were very light, and many fields came to nothing. The pease are small, but there is no appearance of bug.

Duncan Schooley, Bertie, Welland: There are more pea-bugs than last year.

W. S. Howell, Sombra, Lambton: Pease are small and somewhat buggy.

G. Edwin Cresswell, Tuckersmith, Huron: Pease are a fair crop, but the grain is small, and on that account the yield is lighter than expected.

James Johnston, Carrick, Bruce: Pease are free from bugs and are of good quality, but the grain is rather smaller than usual.

George Buskin, Artemesia, Grey: Pease were of good quality, although they are splitting greatly in the machine, being so dry.

Basil R. Rowe, Orillia, Simcoe: Pease are sound, but the pods are small and poorly filled with small pease.

Wm. Jamieson, Westminster, Middlesex: Some pease are an excellent sample and a fair yield, but in general are deficient in quantity and quality.

Adam H. Secord, Dorchester N., Middlesex: Pease are very small and as hard as shot.

Robert Leake, Oxford E., Oxford: Pease are not a large yield to the acre and a rather small grain, but a very nice sample and quite free from bugs; straw short, but very bright.

Thos. Mitchell, Dumfries S., Brant: Early sown pease fair; late sown very light.

Wm. Courtice, Fullarton, Perth: Pease are for the most part a good crop of straw, and are fairly well podded, but the berry is small on account of heat and drouth.

Duncan McFarlane, Puslinch, Wellington: Early sown pease are good, but late sown are very light in weight.

Christian T. Groh, Waterloo, Waterloo: Pease are very inferior, very, very small, and the worst of all spring grains.

W. H. VanDuzer, Grimsby N., Lincoln: Pease were badly injured by the drouth, but are of fair quality, and there are no bugs.

Wm. McDonald, Esquesing, Halton: Pease though a light crop are of good quality, and are free from the bug.

Peter McLeod, Chinguacousy, Peel: Pease were a good crop on the ground, but they give a poor yield.

John Beasley, King, York: Early sown pease are good, but late sown were caught by the hot weather in the bloom and they fell off.

Thos. Cain, Scott, Ontario: Pease though small are of good quality, but as a general thing the crop was a failure in this vicinity.

Robt. Hodge, Clarke, Durham: Pease that were sowed late were almost a failure on account of the want of rain. They were forced prematurely by the drouth.

C. A. Mallory, Percy, Northumberland: Pease are the poorest crop in years; fields that promised well yielded very light returns, the pods not being well filled.

Franklin Jones, Hillier, Prince Edward: Pease are a very light crop, although the quality is good. The failure is due to the extreme heat at the period of blossoming.

John Sharp, Ernesttown, Lennox: Pease were generally thin on the ground, but where sown early were loaded very well, although much of the later is very poor.

Alex. Ritchie, Storrington, Frontenac: Pease are small and dry. They were broken very much when threshing.

John Taylor, Osnabruck, Stormont: Pease are a failure; the dry weather burnt them up.

R. Serson, Fitzroy, Carleton: Pease are badly worm-eaten and are poorly filled.

Wm. Hawkins, jr., Stafford, Renfrew: Early pease are good, but late sown are a poor crop.

Wm. Ramsay, Mariposa, Victoria: Pease are good in quality, but shorter in the crop on account of the drouth.

A. R. Kidd, Dummer, Peterborough: Pease were affected by the drouth. They are small and the pods are short. The straw, however, was saved in fine condition, and will be relished by sheep and horses.

George Monro, Tyendinaga, Hastings: Pease are the poorest crop in this part of the township, and will not give half an average yield.

Peter McDonald, Machar, Parry Sound: Pease are a good crop, but are badly worm-eaten.

INDIAN CORN.

Though the Lake Erie counties produce considerably more corn as a field crop than all the other counties of the province combined, yet there are a small number of farmers in almost every part of Ontario who raise it, some for the grain and others for cutting green as fodder, and there are indications that the crop is growing in favor, especially for the latter purpose. The reports as to the corn crops in those counties in which it is most extensively grown, although somewhat varying, were on the whole very unfavorable, the November reports being less so, however, than those received in August. Drouth was almost the sole cause assigned by correspondents for the shortness of the crop, as it started splendidly, and up to the middle of July gave promise of a great harvest. The intensely hot and dry weather which then set in retarded its development; the stalks began to wither, the ears ceased to fill, and the grain hardened permanently. The result was a very short yield, although the kernel was dry and hard and the crop was housed in good condition. In a few instances, especially in the West Midland and Lake Huron counties, the crop was a fairly good one, and even in the Lake Erie group some fields yielded comparatively well, owing to early planting, suitability of soil, good cultivation or other specially favorable conditions. In Leeds and Grenville, Dundas, Stormont, and in minor localities in some other eastern counties, corn was a good and profitable crop. The returns to the Bureau show that the average yield per acre throughout the province was 25 per cent. less than that of the preceding four years, while the area planted in corn was less by about 2,000 acres than the average for that period. The following table compares 1886 and 1887:

Districts.	1887.			1886.		
	Acres.	Bush. (in ear).	Bush. per acre.	Acres.	Bush. (in ear).	Bush. per acre.
Lake Erie	87,135	4,560,559	52.3	90,273	6,684,210	74.0
Lake Huron	7,548	405,509	53.7	7,210	484,510	67.2
Georgian Bay	1,193	37,627	31.5	1,134	66,133	58.3
West Midland	22,788	1,128,901	49.5	22,048	1,497,890	67.9
Lake Ontario	25,091	1,152,573	45.9	19,417	1,144,185	58.9
St. Lawrence and Ottawa	14,558	845,261	58.1	12,181	701,740	57.6
East Midland	5,341	262,216	49.1	4,029	218,341	54.2
Northern Districts	239	12,306	51.5	202	8,300	41.1
Totals	163,893	8,404,752	51.3	156,494	10,805,309	69.0

FROM THE AUGUST REPORT.

Jasper Golden, Gosfield, Essex: Early planted corn on rich soil is excellent, but on light sand or clay it is wilted and dried up for want of moisture.

T. F. Kane, Maidstone, Essex: Corn had a promising appearance up to about the middle of July, but has not done well since. I think the ears will not fill now, even though rain should come in abundance.

Robert Manery, Mersea, Essex: Corn looks well, and has made a vigorous growth of stalk, but on account of the very dry weather it is generally thought it will not ear well.

Henry Morand, Sandwich E., Essex: Corn had a very good start and was looking exceedingly well, but on account of drouth no more than half a good crop is expected.

D. Stewart, Tilbury W., Essex: Corn was got in in good time, and has the appearance of being a good crop if we get rain soon to help it to ear. It is standing the drouth well. Later.—Since writing the above I see that the stalks are dying at the bottom.

R. Cumming, Harwich, Kent: On low lying land corn is fairly good, but on gravelly soil it is being cut for feed. On the whole, the prospect is the poorest we have had for a crop of corn for many years.

G. M. Baird, Harwich, Kent: Corn promised well in the early part of the season, but having had no rain from June 21st to the present time, it has dried up so that except in rare cases it will be no good,—those cases being where the ground is strong and new.

J. Bishop, Orford, Kent: Corn is very light, not one-quarter of a crop. I have as good a crop of stalk as ever I raised, but not one-half a crop of ears. Lots of the corn is dried up and has no ears at all.

George Hope, Tilbury East, Kent: Corn has made a good growth of fodder, but is not earing well from lack of moisture.

J. T. Rogers, Dunwich, Elgin: Corn promises to be good if we get some rain soon to help it to ear, otherwise the ears will be small. There is a nice growth of stalk.

James Davidson, Yarmouth, Elgin: The corn crop will be almost a total failure. It promised to be fine in the early part of the season, but it dried up in a great many fields without one ear on it.

A. N. Simmons, Middleton, Norfolk: Corn is all parched on high ground, and some are cutting it for fodder. On low lands it is earing fairly.

H. J. Barber, Townsend, Norfolk: Corn started to grow nicely and bid fair for an unusually large crop, but the drouth and heat have nearly killed it, so that there will be no corn of any account. Perhaps there may be 20 per cent. of a crop.

V. Honsberger, Cayuga South, Haldimand: There is not much corn cultivated in this county now. It will be a light crop, injured by the continuous drouth.

John A. Law, Stamford, Welland: The corn crop looks well on sandy soil, but if rain does not come soon it cannot be any more than half a crop.

Jos. H. Patterson, Dawn, Lambton: Corn started well and a fair stand was secured. It grew nicely until about the middle of July, when it began to wilt from the heat and drouth. Much of it has failed to set ears, and if we don't get rain soon the ears set won't fill out.

John Anderson, Wawanosh East, Huron: No corn grown here except a few pieces for green feed, which are pretty good.

John Douglas, Arran, Bruce: No corn is raised here except some patches for green feed, which have done well considering the drouth.

David Webster, Mosa, Middlesex: Corn was looking exceptionally well till the first week of July, but the drouth has been hard on it, and much of it is not earing at all.

Wm. Jamieson, Westminster, Middlesex: Early sown for feeding purposes will be a good crop, but late sown will be light. The same holds good with that planted for ears.

J. G. Pettit,, Oxford East, Oxford: There are a few fair fields of corn, but not an average crop. Not much grown here, except for soiling purposes.

A. Freeman, Burford, Brant: The corn came up well after planting, but will be a short crop. Some late planting will be nothing but stalks.

W. B. Rittenhouse, Clinton, Lincoln: The early has suffered very materially from the drouth, and unless rain comes soon, the late will be of little value, except for fodder.

Erland Lee, Saltfleet, Wentworth: Corn is very poor, and unless there is rain soon it will amount to nothing, although there are a few fields that look exceedingly well.

R. Forsyth, Pickering, Ontario: Corn is badly affected, and only early corn has come to ear. Fodder corn is suffering badly. It is drying up and going back.

W. G. Rundle, Darlington, Durham: Indian corn has made a good growth of stalk, but the ears will be short. Western corn, which is grown for fodder, appears to be affected more by heat and drouth than the Indian.

R. J. Rutherford, Haldimand, Northumberland: The crop will be short, caused by drouth. The ears are short, and are not filled out properly.

R. J. Dunlop, Pittsburg, Frontenac: Corn is not much planted, but generally looks well, where planted in suitable soil and properly attended to. It seems to suffer less than other crops from the drouth.

W. J. Ruthven Crosby S., Leeds and Grenville: Corn is good. The crop is extra, better than it has been for many years.

A. Harkness, Matilda, Dundas: Corn is exceptionally good. We rarely have seasons too hot or too dry for corn here. This one was as nearly perfect for that crop as any I have ever seen.

Joseph Kyle, Hawkesbury E., Prescott: Corn has grown tall, but I believe the ears will not be nearly so large as last season, owing to the continued drouth.

D. Anderson, Anstruther, Peterboro': Very little corn is planted here, but what was put in did well this season.

J. Hollingworth, Watt, Muskoka: No corn or beans grown as field crops; but where grown as garden crops for home use they have done very fairly.

R. Blair, Carling, Parry Sound: There is not much corn raised here, but what there is is very good.

FROM THE NOVEMBER REPORT.

A. M. Wigle & Son, Gosfield, Essex: Grain is hard and crop light.

Wm. Ellis, Maidstone, Essex: Corn on low land about two-thirds of a crop; none on high land; injured by drouth.

Geo. A. Wintemute, Maidstone, Essex: The condition of the corn is very good; suffered little or nothing from any cause.

James H. Brown, Colchester South, Essex: The corn crop has, perhaps more than any other spring crop, been injured by drouth. Whole fields that looked very promising about the first of July are a complete failure. This is the case with most of the light sand and gravelly parts of the township.

Reuben T. Taylor, Tilbury W., Essex: Corn is pretty good, but not number one; drouth caused a falling off.

F. B. Stewart, Raleigh, Kent: Corn very light; in many cases not half a crop; not more than three-fourths average; damage occasioned by drouth.

George M. Baird, Harwich, Kent: The corn was almost a failure, except on low and strong grounds.

Thomas H. Coatsworth, Harwich, Kent: The condition of the corn is all right now; it is mostly all in the crib or eaten. The crop was very poor; will not go ten bushels per acre.

James McFarlane, Dover, Kent: Corn very well secured; injured by long drouth, and the wire worm did much damage last spring.

Sheldon Ward, Malahide, Elgin: The condition of corn is better than was expected early in the season; from what I can learn it will be, on the whole, a little over half a crop.

David Newton, Dorchester S., Elgin: Corn is poorly eared and the yield will be small, but the crop is in good condition.

Samuel Maccoll, Dunwich, Elgin: Corn is a light crop, but ripened well; heat and drouth caused a partial failure.

W. W. Wells, Woodhouse, Norfolk: Corn was generally poor; plenty of stalks, but few ears.

John Meharg, Houghton, Norfolk: The crop of stalks is good, but the corn is not half a crop on account of the drouth.

O. E. Twiss, Middleton, Norfolk: Corn on high dry land was not worth husking, but on low land it was a fair crop where it was planted early.

V. Honsberger, Cayuga S., Haldimand: Early planted corn fair, but spring plowed ground and late planted very poor.

Cranmer Riselay, Bertie, Welland: Corn about an average crop of good quality.

W. S. Howell, Sombra, Lambton: Corn was thin on the ground; not very well eared—ripened unevenly from the effects of the drouth. The blackbirds picked the tops of many ears.

Jas. Lovell, Brooke, Lambton: The season has been bad for corn, a great deal of it is not worth husking.

Martin Wattson, Bosanquet, Lambton: Corn very unequal. On one farm here it will go 100 bushels to the acre; quite a number will not exceed ten; others from 15 to 20.

Alex. E. Wark, Plympton, Lambton: Corn is harvested in good condition; no damage done by frost; the dry weather shortened it considerably, but I consider it the best paying crop we have on account of the large amount of feed obtained per acre compared with other crops.

Basil R. Rowe, Orillia, Simcoe: But little corn is planted here, and of that some pieces produced scarcely anything, while others had an excellent crop, largely productive and long, well filled ears and first rate quality of grain.

Robert Gibson, Delaware, Middlesex: Owing to dry weather the earliest and most promising corn was almost a failure, but few ears being found on a hill.

Malcolm Campbell, Ekfrid, Middlesex: Corn was a failure on light sandy land; did best on river flats; drouth the chief cause of failure.

James A. Glen, Westminster, Middlesex: Corn is a poor crop, except the early planted, and even that has plenty of "nubbins."

Adam H. Secord, Dorchester N., Middlesex: Small stalks, ears short and few, but sound grain. Shortness of crop was caused by the drouth.

Wm. M. Ryan, Dereham, Oxford: The little raised here is a fair crop.

James G. Pettit, Oxford E., Oxford: Except in a few cases corn is much below an average crop, the greater part being only fit for fodder.

Thomas A. Good, Brantford, Brant: Ripe and hard but small ears, and very poor crop.

Henry Key, Oakland, Brant: Corn is very poor; only an occasional good field; does not appear to have filled properly.

Robt. Shearer, Niagara, Lincoln: Put in in fine condition and fodder good, but the yield of corn much reduced by the drouth.

Melvin Moyer, Clinton, Lincoln: Geologically there are two very distinct portions of this township, one a very light sandy soil, the other a clay soil. On the sand the corn was a fair crop and of fair quality, but on the clay much of it did not ripen. Drouth injuriously affected it, though probably not as much as it did the other crop. Late corn damaged a little by frost, but most of the corn was harvested before frost came.

John Secord, Grantham, Lincoln: Corn is a great deal better crop than the people anticipated, especially when it was well cared for. The yield is better than was looked for two months ago.

Erland Lee, Saltfleet, Wentworth: Corn is well ripened, but the ears are not large though well filled; damaged by drouth.

J. D. Evans, Etobicoke, York: Considerable quantity of sweet corn is grown here for Toronto market; it was uninjured.

Ralph Forsyth, Pickering, Ontario: Corn was not an average crop on account of drouth; it was harvested in fair condition.

H. A. Walker, Hope, Durham: Corn good on low moist land; poor on high land.

W. A. Peters, Hope, Durham: Clay land and level culture gave a good crop, while on the sandy land it was all dried up at the time of earing.

John Miller, Haldimand, Northumberland: Corn is a fair crop, except in some instances where it was planted late and affected by drouth.

James Benson, Ameliasburg, Prince Edward: Corn good, but yield small; injured to the extent of fifty per cent by dry weather.

E. R. Sills, S. Fredericksburg, Lennox and Addington: Corn was a very good crop considering the dry weather; well taken care of.

A. Knight, Kingston, Frontenac: Corn is good; drouth did not affect it as much as other crops.

S. Going, Wolfe Island, Frontenac: The few patches of corn planted were good and harvested in good condition.

J. A. Russell, Bastard, Leeds and Grenville: The best crop that has been for years.

James Collison, Matilda, Dundas: Corn good; farmers, I think, ought to plant more corn and sow more western corn, as it comes in well in a dry fall like this.

Robt. Vallance, Osnabruck, Stormont: Corn good; the most favorable season for that crop that could be had.

James Wylie, Hawkesbury E., Prescott: Corn was thought to be good in the early part of the season, but on harvesting it was found deficient; the ears were short.

Wm. Ramsey, Mariposa, Victoria: Corn very light; too dry in the early part of the summer for it to start.

BUCKWHEAT.

An area of 64,143 acres was devoted to buckwheat in the province in 1887, being 6,649 acres less than in 1886, and 2,033 more than the average for the five years 1882-6. The total yield, however, is not quite two-thirds of that of 1886, and falls 463 878 bushels short of the average for the preceding five years. The average yield per acre was only 16 bushels, as against 23.7 for 1886 and 24 in the five years 1882-6. The causes assigned for the poor crop were few, and there was a remarkable unanimity of opinion expressed. In the first place the drouth affected the early sown buckwheat severely, and the steady glare of the sun at the time of bloom literally dried up the blossom, besides drawing on the vitality of the plant generally. Later sown buckwheat was not fully ripened before the early autumn frosts came, and the crop suffered in consequence, more especially in the eastern parts of the province. In some counties along the

St. Lawrence many farmers turned their cattle in upon the green crop, while others plowed the crop under. The following table gives acreage and yield for the harvests of 1886 and 1887 :

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	10,072	156,823	15.6	10,768	224,024	20.8
Lake Huron	1,023	25,339	24.8	1,431	23,096	16.1
Georgian Bay	835	11,174	13.4	996	18,510	18.6
West Midland	2,649	31,998	12.1	2,571	55,107	21.4
Lake Ontario	17,032	315,619	18.5	19,395	432,258	22.3
St. Lawrence and Ottawa	26,361	384,938	14.6	28,989	757,088	26.1
East Midland	5,787	87,672	15.1	6,321	159,109	25.2
Northern Districts	384	11,790	30.7	321	9,516	29.6
Totals	64,143	1,025,353	16.0	70,792	1,678,708	23.7

FROM THE NOVEMBER REPORT.

Geo. A. Wintemute, Maidstone, Essex : Buckwheat is an abundant crop. It has suffered little or nothing from any cause.

W. W. Wells, Woodhouse, Norfolk : Buckwheat is not good, in fact it was very poor. It was too hot and dry for it.

W. S. Howell, Sombra, Lambton : Buckwheat was but very little sown and did not come up on time That which did grow was well loaded, and the grain is plump.

Wm. Gorman, Brant, Bruce : Frost killed all the buckwheat sown.

Joseph Townsend, Sullivan, Grey : Buckwheat had mostly to be plowed up.

C. A. O'Malley, Mosa, Middlesex : Buckwheat is poor, being hurt by the drouth, snn and early fall frost.

Wm. Jamieson, Westminster, Middlesex : Buckwheat came to harvest in very small quantities. It was very thin on the ground, and the early frost caught it too soon, and hence many plowed it under.

John Miller, Haldimand, Northumberland : Buckwheat is a very good crop. There is no frost to hurt it.

C. A. Mallory, Percy, Northumberland : Buckwheat in consequence of the drouth did not come up well and was light in the straw, but was well filled.

W. R. Leavens, Hallowell, Prince Edward : Buckwheat was injured by the drouth, and acres of it never vegetated, but the quality of the grain is good.

Franklin Jones, Hillier, Prince Edward : Early buckwheat did not come up well because of dry ground. Later sown did better, but in some localities it was injured slightly by frost, and since cutting has been further injured by rains which prevailed for about ten days.

P. W. Miller, Kaladar, Lennox and Addington : Early sown buckwheat suffered from the drouth and late sown was injured by frost, and the yield is consequently shortened about one half.

George Sanderson, Oxford, Grenville : Buckwheat was damaged on the low land by the early frosts, and on high land by drouth. It may be considered a failure.

G. I. Morgan, Osnabruck, Stormont : Buckwheat was a fair average crop where late sown, but early sown was injured by the prolonged heat.

Donald F. McRae, Roxborough, Stormont : Buckwheat is quite a failure. More than half was left to the cattle to browse upon, and but a small portion of it was threshed.

Joseph Kyle, Hawkesbury, Prescott : Buckwheat was a failure through drouth. A great many farmers ploughed their crop under.

Wm. Doyle, Osgoode, Carleton : Buckwheat was almost a total failure. Early sown was killed by the sun when in blossom, very few fields of it being cut. What was sown about the last of June was about one-third of a crop.

Lewis Morton, Goulbourne, Carleton : Buckwheat is saved in good condition, so far as straw is concerned, but the grain is almost *nil*. From one to three bushels per acre was the yield where threshed, but much of it was not threshed at all. Drouth and the hot sun were the causes of the failure.

Benjamin McKeracher, Bathurst, Lanark: Buckwheat was a very poor crop. It never ripened fully —in fact half of it was in blossom when the other half was about ripe.

H. Spence, Dummer, Peterborough: There was but little buckwheat sown, and as most of that was late it was badly injured by the early frost.

J. R. Ketcheson, Madoc, Hastings: Buckwheat on the whole is a good crop, although injured in places by drouth.

Edward Bray, Stephenson, Muskoka: Buckwheat was a failure in most places. The dry weather injured the blossoms.

BEANS.

Three-fifths of the area devoted to the culture of beans in the province may be found in Kent, in which county 12,605 acres were this year given to the raising of that legume. Norfolk came next with 946 acres, but the acreage of the other counties is made up chiefly of small fractions of an acre, forming probably part of the kitchen garden, where the crop is grown almost entirely for family use. In these latter cases the bean gave the best yield proportionately. In Kent the returns were discouraging. The seed started well, but the drouth had the effect of stunting the haulm, and the pods suffered in sympathy. This bean raising county barely reaches an average of 12.1 bushels to the acre, whilst the average yield of the province generally is 13.6 bushels, against an average of 21.9 bushels for the previous five years. In the following table the acreage and yield of the crops of 1886 and 1887 are compared:

Districts.	1887.			1886.		
	Acres.	Bush.	Bu-h. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	14,534	178,182	12.3	14,299	319,744	22.4
Lake Huron	549	8,725	15.9	703	14,663	20.9
Georgian Bay	166	3,359	20.2	202	4,826	23.9
West Midland	590	9,992	16.9	743	15,729	21.2
Lake Ontario	1,446	23,047	15.9	1,906	44,011	23.1
St. Lawrence and Ottawa	2,571	46,764	18.2	2,762	71,476	25.9
East Midland	393	5,475	13.9	414	10,358	25.0
Northern Districts	26	431	16.6	43	1,265	29.4
Total	20,275	275,975	13.6	21,072	482,072	22.9

G. R. Langford, Camden, Kent: It has been too dry for beans. The vines are good, but they are not filling well, and will only be about half a crop.

G. M. Baird, Harwich, Kent: Beans augured well, but the extreme drouth and heat have prevented them from filling, and I don't think the crop will be a third of what it otherwise would have been.

J. Bishop, Orford, Kent: Beans may average four bushels an acre, as there are a few early pieces that look pretty well, but other fields are not worth pulling.

J. G. Stewart, Raleigh, Kent: There is quite a large area in beans here, and in general when matured will crop up to the average.

Lewis Simpson, Dorchester S., Elgin: The bean crop will be light, caused by the drouth.

H. J. Barber, Townsend, Norfolk: Beans are not much grown of late, and those who have planted them this year will lose their labor. The straw is not good, and the pods are few and dried up.

W. S. Howell, Sombra, Lambton: The earlier they were planted the better they averaged. Late beans were withered and stunted by the severe heat and drouth just as they were blossoming, and many fields will prove a failure. Those maturing will be small.

D. B. Nighswander, Markham, York: Not so many beans are grown as formerly, but they appear to be a very fair crop considering the very dry season.

Joseph Kyle, Hawkesbury E., Prescott: Beans, owing to the fall in price last season, have not been sown largely. Whatever has been planted around here appear to be growing pretty well.

H. A. Schultz, Sebastopol, Renfrew: Beans are badly affected by the drouth, and are considered a failure this year. They are not sown to any great extent.

FROM THE NOVEMBER REPORT.

Thos. H. Coatsworth, Harwich, Kent: Beans were a very poor crop. They will not go 10 bushels per acre; about 6 bushels will, I think, be nearer an average.

George M. Baird, Harwich, Kent: Beans are not over a quarter crop, and on high ground are a total failure.

Martin Wattson, Bosanquet, Lambton: Beans planted early lost their blossoms by drouth, and what beans came on later did not ripen well and were caught by the frost.

James Murton, Portland, Frontenac: There are not many beans raised here, and these are poor from want of rain.

John Whelan, Brudenell, Renfrew: Beans are not much sown. The bean is small, yet sound and good. The yield is rather light.

John Hollingworth, Watt, Muskoka: Beans are grown for home use only. They are smaller than usual but good in quality.

SORGHUM.

Sorghum has been steadily declining in favor as a farm crop for the last few years, and the yield for the past season was so poor that there is likely to be a still further decrease in the area devoted to its culture. It has never been grown to any extent except in some of the Lake Erie counties, and though there is an occasional report of a good yield in Essex and Kent, the crop was in most cases severely damaged by the drouth and in a few instances by frost.

FROM THE NOVEMBER REPORT.

A. Papineau, Rochester, Essex: Very little sorghum but good.

Wm. Ellis, Maidstone, Essex: Sorghum very poor on account of drouth.

Edward Nash, Mersea, Essex: Season too dry—no sap.

Reuben C. Taylor, Tilbury W., Essex: Very little sorghum grown now.

Horatio N. Scratch, Gosfield, Essex: Sorghum not very good on account of drouth.

Arthur J. Arner, Gosfield, Essex: Sorghum is a light crop but well ripened.

S. McDonald, Orford, Kent: Very short and late; caught by frost.

Geo. A. Marlatt, Bayham, Elgin: Sorghum not extensively grown here; what was grown was very fair.

G. Edwin Cresswell, Tuckersmith, Huron: Owing to the absence of frost this spring sorghum did well. The hot summer was also favorable. Mr. J. Thompson had one of the finest crops of sorghum I ever saw grown—12 feet in height. I never saw anything in Kansas or Texas to beat it.

HAY AND CLOVER.

Though continued dry weather is considered unfavorable to the hay crop, the reports of correspondents strongly emphasized the fact that the dry season of last year did not affect the hay and clover crop nearly so unfavorable as might have been expected. This was doubtless owing to the fact that the arid term for which the summer of 1887 will long be remembered began too late to seriously damage the hay and clover, whose growth was well nigh completed in most localities before the drouth had fairly set in. Indeed, the severe winter and the dry, cold weather of April and May seem to have done more injury to these grasses (particularly the clover) than did the summer drouth which so seriously affected the grain and root crops. In many places red clover was badly winter-killed, and though alsike fared somewhat better it did not quite escape. Old meadows were less productive than new ones almost everywhere, but even these were far from being unproductive. In some localities the midge did a good deal of harm. Assuming,

however, that in nearly half the counties the hay crop was lighter than the average, the loss incident to this was, to a large extent at least, compensated for by the perfect condition in which the crop was harvested in every portion of Ontario. The hay crop, though on the whole somewhat below the average in point of quantity, was far above it in quality. As stored it was of the very best grade (except in some cases where it was allowed to become over ripe), and the feeding value of the crop was probably little, if any, behind that of an average crop housed in ordinary condition. Another favorable condition was that farmers began the winter feeding with their eyes fully open to the danger of running short of feed. No rational stockman retained upon his farm more stock than he had a reasonable prospect of handling properly and profitably. With all prudent men "forewarned was forearmed." Throughout the Lake Erie counties the crop of timothy appeared to be nearly or quite up to the average, especially in Kent and Essex, while the clover was fairly good, though some farmers complained of winter-killing and spring frosts. In the Lake Huron counties the hay crop was even better than the region immediately south of them. The drouth was not so severe in these as in the more southerly counties, and yet very few correspondents reported a drop of rain during the hay harvest. In the Georgian Bay counties the crop of timothy was heavy, if not heavier than usual, and though a considerable amount of clover was winter-killed the combined product was above the average of the preceding five years. While the timothy was fairly good throughout the greater portion of the West Midland counties, the clover suffered pretty seriously. In Perth the drouth appeared to be felt severely even as far as the hay crop is concerned, though complaints of this kind were the exception rather than the rule in other counties. From the county of Dufferin the reports were very good. The reports from the Lake Ontario counties did not differ very materially from those of the West Midland. Clover was injured by the severe winter and backward spring, while timothy appeared to be at least an average crop. The reports from the county of York were decidedly favorable. The correspondents from the St. Lawrence counties sent a variety of reports, even those from contiguous localities often differing very widely, and it was therefore difficult to get at anything like a consensus of opinion. It is, of course, well known that in eastern Ontario the seasons are somewhat more backward than in the west, and it would seem that in many localities the drouth came in time to shorten the then unmatured hay crop. On the other hand, the dry term does not seem to have been as continuous in eastern as in western Ontario, "streaks" of showery weather doing an immense amount of good to the crops in comparatively narrow belts throughout that portion of the province lying east of Kingston. From the East Midland counties and the Northern districts there were no reports that were particularly discouraging, while many were of the most favorable character. The following table gives the acreage and yield for the two years 1886 and 1887 :

Districts.	1887.			1886.		
	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.
Lake Erie	270,779	357,716	1.32	272,538	367,133	1.35
Lake Huron	235,757	363,476	1.54	231,549	275,168	1.19
Georgian Bay	192,180	262,204	1.36	186,024	202,581	1.09
West Midland	402,129	576,109	1.43	407,952	550,027	1.35
Lake Ontario	408,562	522,060	1.28	427,618	588,124	1.38
St. Lawrence and Ottawa	575,494	778,743	1.35	569,028	789,637	1.39
East Midland	154,103	176,897	1.15	160,297	185,052	1.15
Northern Districts	41,639	56,405	1.35	40,145	36,724	.91
Totals	2,280,643	3,093,610	1.36	2,295,151	2,994,446	1.35

CLOVER SEED.—All accounts agree in placing the crop of clover seed as a complete failure. It was injured in places by winter heaving, but the drouth told upon it from one end of the province to the other, and barren fields were the rule for the second crop which furnishes the supply of seed. Where the fields were used as pasture early in the season, and the second growth got a better start than if mown, a more favorable report was given; yet, generally speaking, the crop was a total failure. In some counties the scarcity of other pasture obliged farmers to turn their stock upon fields which were intended to be reserved for seed, and the result was that in some townships, particularly in the West Midland counties, hardly an acre of clover was kept for seed. In many parts of the province the midge assisted in the annihilation of the crop. Few fields of clover set apart for seed paid the expense of threshing, and as the crop was more or less of a failure for the four or five preceding seasons, it is probable that the area devoted to this crop will be still further diminished.

FROM THE AUGUST REPORT.

J. G. Stewart, Raleigh, Kent: The quality of the hay crop averages very well, and the quantity is above the average. The drouth was not early enough to affect it to any extent. All was secured in first-class condition without rain.

H. J. Barber, Townsend, Norfolk: Some fields of clover were injured probably 50 per cent. by winter frosts, and the entire crop was injured more or less by the dry, hot weather a short time before cutting. The crop will be about two-thirds of an average. It was secured without rain. Clover seed will be scarce. A few farmers cut the first crop very early, hoping to get a second crop for seed; they will have some seed, but the stalk is so short on account of the drouth that it will be difficult to gather the crop.

Joseph Martindale, Oneida, Haldimand: Hay good and secured in good condition, as there was no rain while haying. No catches of clover; the dry weather has killed it.

F. A. Hutt, Stamford, Welland: The quality is good; no injurious effects from drouth or frosts. The crop was secured in excellent condition.

D. G. Holcomb, Thorold, Welland: Hay was a good crop and was well secured. The clover crop for seed was a total failure, caused by drouth.

D. S. Robertson, Plympton, Lambton: The crop was good, but I am sorry to say there is not as much clover grown in this section of the country as there should be. The weather was all that could be desired. On account of the unusually early harvest a great deal of timothy was left uncut until after the fall wheat was reaped, the consequence of not commencing haying operations soon enough. Very little clover seed is grown here.

James Lovell, Brooke, Lambton: Hay is altogether the best crop that we have this season, and has all been secured in splendid condition.

A. Doupe, Usborne, Huron: Hay and clover will average about two tons per acre. Frosts in the spring did considerable damage to clover roots. The prospect of a seed crop of clover is not very bright, as very little rain has fallen since the clover was cut for hay.

C. Prouty, Stephen, Huron: Hay was an unusually good crop. Neither drouth nor frost had any injurious effect upon it, and it was secured in good condition.

Wm. Welsh, Huron, Bruce: The crop was very heavy and saved in good condition; it could not have been better

Thos. Welsh, Huron, Bruce: The hay crop is above the average in quantity and quality, and mostly saved in fine condition, except some which was rather ripe. The weather has been favorable. The prospect for clover seed is not good; the midge has been very plentiful.

Wm. Irvine, Bentinck, Grey: Hay was good and secured in fair condition. There will be no seed crop of clover this year.

James Marshall, St. Vincent, Grey: There is a good crop of hay throughout the township, and it was secured in good condition. The dry weather will have a bad effect upon the crop of seed clover.

Peter Bertram, Orillia, Simcoe: The hay crop was good in yield and quality where secured in time, but in quite a number of instances it was left too late and allowed to ripen too much; and in some instances it was left that fall wheat might be got in, and so spoiled.

James Sneath, Vespra, Simcoe: The quality of the crop is good. It was not injured by frost, but the dry, hot weather of June prematurely ripened it and retarded the yield. The weather was fine during hay making, and the crop was secured in good order. I have noticed that a number of timothy stalks turned white before being ready to cut, and I attribute it to some insect working at the root.

R. Gibson, Delaware, Middlesex: The quality of the hay crop is first-rate. The drouth had a great effect, especially on old meadows, on which there would not be three-fourths of an average crop. Owing to the continued drouth there will be no clover seed.

Stephen Hall, Blenheim, Oxford: Hay is a light crop of fine quality, and although the drouth in May affected the crop very much, it was secured in fine condition. The prospects of young seed is very bad, as heat and drouth have destroyed a large portion of it.

Thomas Baird, Bradford, Oxford: The hay crop has been an unusually fine one. Although I have given its average at one and a half tons per acre, yet plenty of fields will yield from two to three tons an acre, and it has all been secured in the finest condition possible; very little of it got a drop of rain. We were cutting one day and hauling in the next.

D. McLean, Lanark, Perth: On old lands the hay was light. On new, where the old system of seeding out with clover and timothy was followed, the crop was good in quantity and in quality. The crop was secured in the very best condition; very little of it got any rain. There will be no seed clover here this year. I noticed no premature ripening of grasses this year.

W. Brown, Guelph, Wellington: The quality of hay is excellent, although the drouth reduced the crop about one third in quantity. We had not a shower to retard operations.

James Reith, Lothian E., Dorchester: The hay crop is very good and has been well secured, as we had good weather during haying. Very little clover seed is raised here.

Isaac A. Merritt, Grimsby S., Lincoln: The quality of the hay crop is good. The drouth we had since early in May caused a short growth of hay throughout the township, but the crop was secured in prime condition. We had scarcely any rain during the time of haying.

C. Cameron, Nassagaweya, Halton: The drouth caused the old meadows to give only half a crop, but on account of the dry weather it was housed in excellent condition. There is no second crop; scarcely a green stalk of clover can be seen. The red top and sweet grass ripened prematurely, the former was owing to the midge, and the latter to some insect in the joint.

W. Porter, Toronto Gore, Peel: Hay was secured in first-class condition. Old meadows were rather scant on account of drouth in May. Not a pound of clover seed will be harvested where mine and everything is dried up for want of rain. Timothy seed, from the same cause, is only half an average.

John Foott, Hope, Durham: Clover suffered a good deal from winter and spring frosts and was thin at haying time. The hay crop was secured in good condition, although some of it was too dry before it was cut. There will be little or no clover seed, owing to the great drouth. There is no pasture; no aftergrowth. The hay stubble is completely burned up.

E. J. Honey, Percy, Northumberland: Clover was badly winter-killed. There was a little alsike sown last year and that stood the winter better, but there is no red clover save in a few well sheltered fields. The hay crop suffered very much from the drouth, and will be considerably below an average crop. Hay was all secured in fine condition. There will be no clover seed here.

Jonathan Dunn, Brighton, Northumberland: The hay crop, so far as quality is concerned, is excellent. The drouth had the effect of lessening the bulk, and the frost affected clover much the same. The weather was all that could be desired in the operation of curing; the crop could not have been saved in better condition. No clover, and consequently no seed. I have noticed premature ripening of most of the grasses, but the cause I cannot explain, except on the ground of the dry, hot weather.

P. W. Miller, Kaladar, Lennox and Addington: Newly sown clover is an average crop; it got an early start and was harvested in good condition. There will be no seed, owing to the dry, hot weather. Other hay is as good as last year.

James Lane, Denbigh, Lennox and Addington: There is a heavy crop of hay and clover. The drouth ripened it prematurely, but it suffered none by frost. There was good weather for haying.

S. Chalmers, Wolford, Leeds and Grenville: We had no frost to hurt, but the dry weather in the early part of May reduced the average. We had fine weather for saving hay, and secured the crop in good condition. All grasses are dried up here now, even on the deepest soils.

John Kennedy, Mountain, Dundas: The quality of the crop is good. No damage by frost or drouth. The weather has been favorable. Clover seed is not grown.

D. B. McMillan, Lochiel, Glengarry: The quality of the crop is very good. There was plenty of rain and no frost, consequently there was but little to injure hay or clover. The weather was splendid for clover, which was all secured in good condition.

Joseph Kyle, Hawkesbury E., Prescott: Hay and clover are above the average in this locality. They were not touched by frost, but the drouth had the effect of ripening it earlier than in other years. We had splendid weather for haying, and the crop was secured in good condition. We do not raise seed from clover in this locality. I observed premature ripening of timothy, but supposed it to be from a grub at the root.

Wm. Doyle, Osgoode, Carleton: The hay and clover crop may be called an exceedingly good one. We had all the showers of rain we required. With the exception of some early cut hay, the crop was secured in the best condition, the weather being very favorable.

John H. Delamere, Lutterworth, Haliburton: The crops never before promised better until the continued drouth, when they ripened too quickly. The hay crop has been most abundant. There were no frosts after the snow went off, so that in this locality, and in the adjoining townships of Anson, Minden and Snowdon the yield is above the average, and it was saved in excellent order. Of course, on some lots, where there was but little soil covering the rock, it dried right up; but, generally speaking, it is a good crop.

A. Wiancko, Morrison, Muskoka: The hay crop is good and abundant. When haying commenced we had frequent showers. Very few begin early, but stick to the old custom of commencing to cut their hay on the 12th of July; although nearly all were constrained to begin a week earlier this year. The weather was very dry all through, and a great deal of the hay got too ripe. We do not raise clover for seed.

O. Duross, Oliver, Algoma; The hay crop is a good one. The clover was not injured. We had wet weather during haying, yet the hay was fairly saved, although darkened in color. We do not raise clover seed.

FROM THE NOVEMBER REPORT.

Wm. Ellis, Maidstone, Essex: No clover for seed; cause—drouth.

James H. Brown, Colchester S., Essex: The clover seed in this township is almost a total failure; a few early cut fields will yield about half a crop. Cause of failure, drouth; no injury by frost or midge.

Arthur J. Arner, Gosfield, Essex: The clover crop for seed is almost a failure; a few good fields where they were pastured in the early part of the season. Drouth and midge injured the crop almost to destruction; no frost.

Thomas F. Routledge, Orford, Kent: On low, moist, sandy land the clover seed is good, but on all the high land it is a total failure.

Thomas H. Coatsworth, Harwich, Kent: The clover crop for seed is a total failure; it was completely cooked up by drouth.

Sheldon Ward, Malahide, Elgin: The clover crop for seed is a failure; no straw to speak of, though what there is is well filled. Drouth the cause of failure.

Geo. A. Marlatt, Bayham, Elgin: The most abundant crop there has been raised in ten years, and of the best quality. No damage by drouth, frost or midge.

David Newton, Dorchester S., Elgin: On account of the extremely dry season there will be very little, if any, clover seed in the township.

James Morrison, Walsingham, Norfolk: Some clover that was pastured off will be a good crop, but what was cut for hay did not start till too late and does not amount to much. No midge.

Arthur Simenton, Seneca, Haldimand: No clover for seed this season; no rain to start it since it was cut, nor will there be any next year, as the new seeding has entirely failed, and there is an insect in the root that has killed the old meadows.

V. Honsberger, Cayuga N., Haldimand: Common red clover for seed almost a complete failure on account of drouth; a few pastured fields medium. Alsike, a fair average crop. The clover was badly damaged by drouth. The midge had no second crop blossoms to operate on.

J. W. Overholt, Wainfleet, Welland: There is no clover seed in this locality, being too dry weather.

Chas. Gale, Sombra, Lambton: Clover for seed, none; dry weather the cause. It was so short that it was not fit to cut for feed; cattle would not eat it standing.

John Beattie, McKillop, Huron: There is scarcely such a thing as a field of clover for seed in this section, on account of dry weather.

G. Edwin Cresswell, Tuckersmith, Huron: I have not heard of a single field of second crop clover being cut for seed. Drouth prevented or dwarfed the second cut of clover, and if any was cut it must have been almost worthless. The spring sown clover is nearly all killed out by the drouth.

Thos. Inglis, Carrick, Bruce: There is scarcely any clover seed this season, the drouth and heat being unfavorable.

John Booth, Normanby, Grey: The weather here was too dry for anything to grow after the hay was taken off.

Robt. Carruthers, Artemesia, Grey: Clover very inferior. It seemed to stand still after it got above the stubble, and never appeared to come to much on clay land. I have seen fair prospects where the land was loamy. No damage by frost or midge as far as I know.

Jas. Robertson, Flos, Simcoe: The clover is good in quality, but the season was so dry that the quantity is small.

Samuel Frazer, Tay, Simcoe: Clover made scarcely any start at all. There was no second crop, and consequently no seed. Spring frosts hurt it very much, and the great drouth did the rest. There was no after-growth.

James Alexander, Ekfrid, Middlesex: Clover crop for seed almost a failure; damaged by drouth.

John Grimason, Caradoc, Middlesex: The condition of the clover crop for seed is very poor; I do not think there will be any in this locality, as the second crop made no growth owing to dry weather.

W. D. Stanley, Biddulph, Middlesex: I am not aware of one field being kept for seed in this township or in the adjacent townships.

John Sheehan, Norwich N., Oxford: Clover crop poor; not much saved; mostly used for pasture.

S. C. Tuttle, Oxford E., Oxford: There was very little raised in the township. The quality of the seed was very good, but owing to lack of pasture there was very little left for seed, and it was rather thin on the ground on account of drouth.

James Anderson, Zorra E., Oxford: Very thin and short, but well filled with good seed. Not much harvested, as all available grass was wanted for stock.

David Beamer, Burford, Brant: No red clover in this locality to my knowledge; damaged by drouth and midge.

Thomas Mitchell, Dumfries S., Brant: Only one field to report; appeared to be very good. Drouth was the trouble all round. The midge is about gone; might say, died of actual starvation.

John Campbell, Blanshard, Perth: Clover very light as a general thing; where pastured until about the middle of June the crop is better. The drouth had a bad effect, but no complaint about the midge.

John Keith, Nichol, Wellington: No clover grown for seed; the young clover damaged by the weather.

Wm. Wallace, Dumfries N., Waterloo: No clover seed grown this year; all wanted for pasture.

Levi Witmer, Waterloo, Waterloo: No clover left for seed; farmers will have to depend on seed grown in some other section of the country.

Wm. N. Kiernan, Mulmur, Dufferin: A complete failure through dry weather: drouth destroyed the little that was attempted.

John Secord, Grantham, Lincoln: The first cut of clover was very good, but owing to dry weather the second crop is minus, and there will be but little, if any, seed gathered in this section.

W. H. Van Duzer, Grimsby N., Lincoln: There is no red clover seed and very little alsike, and that badly injured by drouth and hot weather.

James R. Cooke, Barton, Wentworth: Almost *nil* here. The few who raised any got about a quarter of an average; drouth and midge.

W. C. Ingelhart, Trafalgar, Halton: Owing to the drouth clover made no growth after the first cutting, consequently there is no seed in this locality.

F. J. Sleightholm, Toronto Gore, Peel: No clover seed; weather so dry that the aftermath was *nil*; not affected by frost or midge.

John Sinclair, Chinguacousy, Peel: Alsike clover a fair crop; midge ruined red clover.

J. Bartholomew, Whitchurch, York: Alsike and White Dutch clover a fair crop; red clover poor; hurt by midge and drouth.

John Gibson, Markham, York: Very poor; drouth and midge very bad.

Angus Ego, Georgina, York: Alsike a good crop in this township. As for the red clover the drouth injured it greatly, and in most cases the farmers turned their stock in on what was not a promising crop—pasturage being scarce.

R. S. Webster, Scott, Ontario: Very little clover in this township this year. The plants failed to mature, or the heads to fill on those that did mature. A small quantity of alsike of very fair quality will be secured. Mainly damaged by drouth.

Alex. McGregor, Reach, Ontario: No clover for seed in this district, a great quantity of it being winter-killed, and the latter part of summer being too dry for it.

Robt. Colville, Clarke, Durham: Very little came to maturity owing to drouth, but the little that is of it is of a better quality and freer from midge than past few years.

Walter Riddell, Hamilton, Northumberland: There is no clover for seed, or very little, in the township. The frost in spring injured it some and the drouth finished it.

Geo. L. Hough, Athol, Prince Edward: Clover crop, as near as can be ascertained, will be a total failure on account of the dry season.

W. R. Leavens, Hallowell, Prince Edward: On account of the severe drouth the second crop of red clover is very small and injured some by midge. Alsike clover is well seeded, considering the dry season, but very little large red clover grown.

E. R. Sills, Fredericksburgh S., Lennox and Addington: The long continued drouth after the clover harvest destroyed one clover crop for seed.

M. Spoor, Wolfe Island, Frontenac: Condition poor; in fact, there is not any seed clover in this township. The continued dry weather prevented any after crop whatever.

R. Serson, Fitzroy, Carleton: It has not grown up since cut, owing to the dry weather; no seed. Drouth did all the harm.

Thomas Wallace, Bromley, Renfrew: The second crop of clover was very bad; it was injured to a great extent by drouth.

Wm. Paterson, Ramsay, Lanark: The young clover in some cases is entirely killed by the excessive heat, and the old fields are shaved to the very earth by the stock, owing to the want of the ordinary amount of after grass. No trouble from any source but drought.

Jno. Campbell, Jr., Mariposa, Victoria: Alsike promising fairly well, but not yet threshed: very little red clover for seed. Considerably damaged by drouth.

Jas. S. Cairnduff, Harvey, Peterborough: Clover seed *nil;* dried up with drouth. From information received I do not think any was saved for seed.

A. R. Kidd, Dummer, Peterborough: Clover crop for seed is a failure; where pastured in the usual way until the middle of June, there may be one bushel to the acre, but if cut at all prior to letting it go to seed the crop is *nil.*

H. T. Miller, Wollaston, Hastings: No clover threshed for seed, but seed was very fine, every head full.

Anson Latta, Thurlow, Hastings: I don't know of a single piece; hot, dry weather cooked it completely.

Robert F. Ogle, Campbell, Algoma: Crop good; none better; no damage whatever.

FIELD ROOTS.

It will be seen by the notes of our correspondents that the root crops, like the grains, suffered much from the absence of rain, so much so that the fall rains, which were tardy in coming, could not restore full vitality to plants weakened and decimated in their earlier stages by the severity of the drouth. While other causes combined to lessen the respective yields of potatoes, turnips, mangels and carrots, the drouth was the chief cause of the small yield.

POTATOES.—The potato crop may be classed as almost a failure. The drouth told greatly against it, both at the time of planting and during the period of formation of the tubers. In some places, where the earlier varieties were planted late, better results were realized. The bug was present in force, and the effects of its work were of a more serious nature than in any of the last three seasons. Correspondents generally agree that the quality of the crop is first-class, although the tubers were small and the yield corresponded to the size. There was almost an entire freedom from rot, and the crop was dug and got into winter quarters under most favorable conditions. The experience of the past season emphasizes the importance of more care in the selection and treatment of soil for the potato, and a careful cultivation of the hills or rows, with timely and active attention to the bug. Those of our correspondents who had good crops attribute their success largely to better cultivation of the potato than is usually given it by farmers. Of course there were many instances where even under good cultivation the yield fell below half a crop, owing to the severity of the drouth. As appears by the following table the acreage is about the same as that of 1886, but the yield is only two-thirds, or 5,334,358 bushels less than was raised in the previous year.

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	14,880	690,415	46.4	14,193	1,470,553	103.6
Lake Huron	11,569	849,304	73.4	11,627	1,043,361	89.7
Georgian Bay	12,136	963,314	79.4	12,679	1,399,874	110.4
West Midland	24,051	1,860,523	77.4	23,150	2,509,607	108.4
Lake Ontario	28,896	1,925,711	76.6	27,685	3,037,815	109.7
St. Lawrence and Ottawa	35,018	3,272,359	93.4	37,142	4,455,515	120.0
East Midland	10,963	764,638	69.7	11,137	1,625,216	145.9
Northern Districts	2,770	351,736	127.0	2,530	470,417	185.9
Totals	140,283	10,678,000	76.1	140,143	16,012,358	114.3

For the five years 1882-6 the average annual area under potatoes was 159,233 acres, the yield 19,896,538 bushels, and the yield per acre 125 bushels.

TURNIPS.—Turnips, which depend largely upon early fall rains for success, were small both in weight and number. The drouth prevailed at the time of sowing and much of the seed did not come up. The fly was very destructive in different parts of the country, and later in the season lice appeared in great numbers in various portions of central Ontario, and wrought much injury to leaf and stem. Like all other crops, there were exceptions to the rule, but it is safe to say that the yield of turnips for the season of 1887 was not three-fourths of an average yield, while in some places it was an entire

failure. The open weather of November afforded an opportunity of housing the crop under most favourable conditions. Although the acreage has increased, the total yield is considerably below that of the previous year. Following is a comparative table for the two years by county groups:

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	2,160	550,195	254.7	1,729	723,076	418.2
Lake Huron	12,610	3,882,525	307.9	11,226	5,465,045	486.8
Georgian Bay	13,000	3,601,160	277.0	12,180	5,836,063	479.2
West Midland	34,686	11,746,512	338.7	32,163	16,775,690	521.6
Lake Ontario	31,037	8,876,835	286.0	29,628	13,448,480	453.9
St. Lawrence and Ottawa	3,664	804,680	219.6	4,129	1,550,598	375.5
East Midland	6,124	1,440,199	235.2	5,562	2,473,171	444.7
Northern Districts	2,041	511,350	250.5	2,314	788,930	340.9
Totals	105,322	31,413,456	298.2	98,931	47,061,053	475.7

The area in crop in 1887 was greater than the average of the five years 1882-6 by 8,785 acres, but the yield was less than the average of those years by 8,155,311 bushels, and the yield per acre less by 111.7 bushels.

MANGEL-WURZELS.—Mangel-wurzels were also struck by the drouth at the time of sowing, and did not fully recover later in the season. The quality of the mangels is said to be ahead of that of turnips, although in yield they are the same proportionately, being about 75 per cent. of an average. The crop was got under shelter early, and the roots, although not up to the usual size, were sound and in good condition generally. The acreage was slightly below that of the previous year, and the yield was hardly two-thirds of the crop of that year. Following are the statistics:

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	1,324	340,660	257.3	1,202	613,320	510.2
Lake Huron	2,210	777,125	351.6	2,174	1,133,350	521.3
Georgian Bay	996	265,181	266.2	983	510,356	519.2
West Midland	5,947	2,216,396	372.7	5,869	3,136,511	534.4
Lake Ontario	4,343	1,327,918	305.8	5,100	2,271,138	445.3
St. Lawrence and Ottawa	1,657	414,947	250.4	1,770	672,221	379.8
East Midland	1,253	311,084	248.3	987	424,547	430.1
Northern Districts	194	42,450	218.8	85	26,300	309.4
Totals	17,924	5,695,761	317.8	18,170	8,787,743	483.6

The average of the five years 1882-6 was 17,191 acres, with a yield of 7,813,418 bushels and 454·5 bushels per acre; the crop of 1887 was consequently 2,117,657 less than the average.

CARROTS.—Carrots were severely thinned by the drouth after sowing, much of the seed having failed to germinate. However, once the crop had made half growth it gathered strength from the deep roots entering moister soil, and made favorable progress during the latter portion of the season. The early thinning of the rows kept the yield per acre low, the average being 231 bushels against 375 bushels in 1886, and 356 in the six years 1882-7. The following table gives the figures for both years by county groups :

Districts.	1887.			1886.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Lake Erie	748	139,513	186.5	613	208,297	339.8
Lake Huron	856	214,996	251.2	856	322,490	376.9
Georgian Bay	969	195,983	202.3	1,096	450,606	411.1
West Midland	1,973	537,486	272.4	1,953	816,562	418.1
Lake Ontario	2,175	530,363	243.8	2,447	930,866	380.4
St. Lawrence and Ottawa	1,435	298,293	207.9	1,471	453,200	308.1
East Midland	807	157,513	195.2	710	264,380	372.4
Northern Districts	147	31,539	214.6	121	32,350	267.3
Totals	9,110	2,105,686	231.1	9,267	3,478,751	375.4

The average area devoted to this crop for the five years 1882-6 was 10,101 acres ; the average yield, 3,826,536 bushels, and the average yield per acre 378·8 bushels.

FROM THE AUGUST REPORT.

E. Nash, Mersea, Essex : Potatoes are a failure. It was so dry that turnip seed did not grow, except in very moist places. I never saw potato bugs so bad as this season.

J. G. Stewart, Raleigh, Kent : Potatoes are a failure. They are very small. All roots have suffered from the drouth. Potato bugs are more numerous than usual. Some patches are completely stripped.

D. Campbell, Dunwich, Elgin : Potatoes are of good size, but not very numerous. Turnips and mangels are not making much progress. Carrots are reasonably good, being deeper rooted.

A. N. Simmons, Middleton, Norfolk : Early potatoes are not bad where planted on good soil. The late crop is doubtful unless we get rain very soon. Other root crops are *nil*, except on very low ground.

Joseph Martindale, Oneida, Haldimand : Potatoes are not very good. Turnips are a total failure. The fly and the dry weather destroyed them. Mangels are not good ; they want rain badly. Carrots are poor.

John A. Law, Stamford, Welland : Turnips are not good. Many of the best farmers lost their whole crop on account of the drouth, as the seed did not germinate. Those sown early are looking fair, but want rain. Potatoes cannot be more than half a crop. Mangels and carrots want rain, but look not so bad.

A. E. Wark, Plympton, Lambton : Potatoes on the whole will be a sad failure, and many an Irishman will go "potato hungry" before next spring. Where people were not too lazy to keep the bugs off there was any amount of top, but owing to the long-continued dry weather, the potatoes are small and few in a hill. Turnips, mangels and carrots are not grown to any extent.

George Fortune, Turnberry, Huron : Potatoes are a fair crop. The bugs have been bad, and the dry, warm weather has shortened the crop some. Turnips, mangels and carrots have been seriously hurt by the drouth. The root crop will be light.

James Tolton, Brant, Bruce : Potatoes, turnips and other root crops promised well until of late ; the drouth has affected them. So far I have not noticed any injury from insects, except potato bugs, which, as usual, are numerous enough, but upon timely application of Paris green can be kept in check.

George Buskin, Artemesia, Grey : The potato bugs were plentiful, but where attended to they did not do much injury. Some people's potatoes are nearly a failure, owing to the seed being over-heated and injured before planting. Some potatoes look well considering the dry weather. Turnips are a regular crop, but if the dry weather continues they will be small. Mangels are not much grown. Carrots are small because of the drouth.

George Binnie, Glenelg, Grey: Potatoes promise a good crop, but they need rain badly. The south part of the township has had no rain of any account since July 9th, with the thermometer over 90° in the shade for days at a time. Turnips are doing well. There are complaints of grasshoppers eating them in some places, but the fly did no damage this year.

George Sneath, Vespra, Simcoe: The long continued heat and drouth have ruined the root crop. Potato vines have ripened without there being any sizable tubers at the bottom. From all appearances there will not be one-third of an average crop. Turnips and mangels have made no growth at the bottom, and the grasshoppers in myriads are eating the top down to the ground.

W. D. Stanley, Biddulph, Middlesex: The potato bug was never worse, and the plants were affected badly by the drouth. Turnips are nearly a failure, owing to the fly and the drouth. Mangels are better than turnips, but are backward, owing to the drouth.

Joseph Howlett, Delaware, Middlesex: Drouth affected the potatoes and the tops are all dead. Carrots are small on account of the drouth. Grasshoppers and the turnip fly were bad.

N. Smith, Oxford West, Oxford: Very early sown mangels and carrots are doing fairly well, but late sown will be poor. Potatoes are not more than half a crop and very small.

Donald McKay, Nissouri East, Oxford: Potatoes have a good appearance, but are rather small owing to the dry weather, and are not numerous. Between the dry weather and the fly turnips are past redemption. Mangels are small and below the average.

Daniel Burt, Dumfries South, Brant: All kinds of roots have suffered very much up to date, especially potatoes and turnips. There are some fine fields of turnips, but unless we get rain soon they will not amount to much. On clay lands roots are very poor.

Duncan Stewart, Easthope North, Perth: Potatoes in many fields did not all grow, leaving blanks; but in others they are very good. Between the bugs, which are unusually bad this year, and the dry weather, I fear potatoes will be a small crop. Turnips started well, with good promise, but are at a standstill for want of rain. Mangels and carrots are not so extensively grown as they were a few years ago, but where grown they are fair.

R. Cromar, Pilkington, Wellington: Turnips are looking pretty well—in some cases extra. Potatoes mangels and carrots are small, owing to the long continued drouth.

George Risk, Wilmot, Waterloo: Potatoes are small in size but fair in quality. I am afraid the crop will be much below the average. Turnips are backward on account of the drouth. Mangels will be a fair crop.

James Reith, Luther East, Dufferin: Potatoes are good—the best we have had for years. Turnips, mangels and carrots are all doing well. The drouth has not affected them.

A. G. Muir, Grimbsy North, Lincoln: All kinds of root crops are looking very bad, except on loamy soil. On clay or black ground they will be almost an entire failure.

Robert Inksetter, Beverley, Wentworth: Roots are the worst failure they have been for a long time. The small potatoes are sunburnt and sprouting in the hills, and there is not one farmer in three that will have any turnips, on account of the fly, drouth and heat.

Wm. McDonald, Esquesing, Halton: Early potatoes are a poor crop, and if rain does not come soon the late ones will be as bad, if not worse. Turnips, to all appearance, will be nearly a failure, as owing to drouth they have scarcely made any progress during the past month. There are very few carrots and mangels sown.

Wm. McKay, Toronto, Peel: Potatoes will be small, as some of them have not been wet since planting. The bugs were very plentiful this year. Turnips are a failure. The fly continued later than I ever remember before. Mangels have done better. The drouth has not hurt them so much. It was too dry for carrots.

N. A. Malloy, Vaughan, York: Potatoes did well during the early part of the season, but the late drouth has seriously affected the growth of the tuber. Colorado beetle was very plentiful. Turnips and mangels may produce a good crop if rain comes shortly.

W. H. Proctor, King, York: Turnips have slow growth and are small. The fly is very bad. A great many farmers were discouraged and ploughed them up. Mangels are small, coming on slow. Early potatoes are taking their second growth. There are some hope for later ones if the drouth ends soon.

Jas. H. Birchard, Scott, Ontario: Turnips look well for this time of the season. Potatoes are very good where the bugs were destroyed. Mangels are very good, but few are grown. Carrots good, but not much grown as a field crop. If the drouth continues much longer it will damage the roots very much.

James Brock, Cavan, Durham: Potatoes are completely dried out—size, like pigeon eggs. Turnips cannot root, as the ground is like ashes. Carrots are much the same.

R. J. Rutherford, Haldimand, Northumberland: Early potatoes are very small, and the late crop will be the same unless we have an abundant fall of rain. All other root crops are much the same. A good many farmers' turnip seed never germinated.

Franklin Jones, Hillier, Prince Edward: The prospects for mangels and carrots are still good, as they will resist the drouth for some time yet. Turnips, except the early sown, were much hurt by the fly. Late sown are nearly a failure. Potatoes treated in time with the Paris green still look well, but the bugs were more numerous than ever before.

C. R. Allison, Fredericksburg South, Lennox and Addington: Early planted potatoes are a great failure on account of the continued drouth. Those planted about the 1st of June promise to be good. Mangel-wurzels promise a good crop.

Alex. Ritchie, Storrington, Frontenac: The continued drouth has made all the root crops very slim looking. The crop of potato bugs is unusually large.

S. Edgar, Kitley, Leeds and Grenville: Potatoes will not be an average crop. The early drouth affected them very much, and the potato bug made sad havoc this year, being worse than usual. The fly cut off a large percentage of the turnip crop. The late rain has helped the growing crop. Mangels are quite good on deep land, and will be an average. Carrots promise well.

David Rae, Winchester, Dundas: Potatoes will be a very poor crop, being badly affected by the heat and drouth, unless they improve very soon. Turnips were eaten up by the fly. Mangels and carrots small.

D. F. McRae, Roxborough, Stormont: Farmers had a hard struggle with the potato bugs. There is no rot, and the potatoes promise well. All other kinds of field roots are good, but are very little raised.

D. B. McMillan, Lochiel, Glengarry: Potatoes, I think, will be a fair crop, although there was considerable damage done to them by the bugs.

F. W. Langrell, Alfred, Prescott: Potatoes are of fair quality, good and dry, but on account of the drouth will hardly yield as large a crop as usual. The bugs have been unusually bad this year.

J. C. Edwards, Clarence, Russell: Roots are a very poor crop, potatoes especially being very small. The early and long drouth kept many of the carrots and turnips from growing at all, and some turnips were injured by the fly.

J. J. Smyth, Gloucester, Carleton: Early potatoes are good; the late will be small. Turnips are nearly a failure. Some farmers sowed turnip seed as often as four times. Mangels and carrots, I think, will be an average crop.

Wm. Doyle, Osgoode, Carleton: Potatoes will be a fair crop. Turnips are poor. Mangels and carrots are looking well, but many fields of them were plowed up, the dry weather in May having prevented the seed from germinating.

H. A. Schultz, Sebastopol, Renfrew: Potatoes will not be more than the seed. Turnips on newly cleared land may be a crop yet if rain should happen to come soon. Mangels made very slow growth for want of rain, and were greatly damaged by rabbits, which are alarmingly numerous. Carrots, like everything else, have suffered from the drouth.

Wm. Paterson, Ramsay, Lanark: Turnips want rain badly, and were generally hurt by the fly. Carrots, mangels and potatoes will all be short for want of rain.

Nelson Heaslip, Bexley, Victoria: Potatoes will be below the average, carrots and turnips are not likely to be more than half a crop. The Colorado beetles are the only insects here. They are very plentiful, requiring the free use of Paris green.

F. Birdsall, Asphodel, Peterboro': Potatoes in most cases are very small on account of the beetle and the drouth. Turnips are very much hurt by the fly and the dry weather, and will not be over half a crop unless there is a great change in the weather. Mangels and carrots are affected by the drouth.

John H. Delamere, Lutterworth, Haliburton: The potato crop is usually large here. Early potatoes this year are good, but the late planting, which means the bulk of the crop, is very light, owing to the great drouth. This, however, may be improved if we get any rain soon; if not, they will not be half a crop. Turnips seem to be doing fairly well, but all our root crops are suffering from the protracted heat and lack of rain.

J. B. Morton, Huntingdon, Hastings: Potatoes that were planted early are a failure. Those planted late might be helped by rain. The crop at best will be almost a total failure. Turnips, mangels and carrots are standing still at present, in a very backward condition.

A. H. Smith, Monck, Muskoka: Potatoes promised a very large yield, but are dying out fast. Bugs are very bad. "Slug shot" is of no use. Turnips had a splendid catch, but are now withered, small and fibrous. Carrots have strong, healthy tops, but the roots are small as yet. Rain is wanted badly.

Peter McDonald, Machar, Parry Sound: Potatoes are a good crop, but the bug injured the early planted. Turnips are looking well, especially those sown late. The fly injured the early sown.

J. H. Johnston, Sandfield, Algoma: Potatoes promise a large yield. Turnips are a total failure, being destroyed by insects.

FROM THE NOVEMBER REPORT.

James H. Brown, Colchester S., Essex: Potatoes are not a one-third crop, and the quality is poor. Where they were planted in low ground they will yield a fair crop, but in most cases they are not worth digging. The cause of failure is drouth. Turnips, mangels and carrots are also affected by drouth, but not to the same extent as potatoes.

G. M. Baird, Blenheim, Kent: Potatoes are a failure, not enough for home consumption, and we are importing from Manitoba and Montreal. Drouth is the cause. All kinds of roots were held back by dry weather, but late rains and the fine fall weather have improved them so that they will be a medium crop.

David Newton, Dorchester S., Elgin: Potatoes are very poor and small, and have been greatly injured by drouth. They will not be equal to the local consumption. Turnips, mangels and carrots have all been injured by the drouth.

E. M. Crysler, Charlotteville, Norfolk: Potatoes were less than a half crop, but they are of good quality. There are some good pieces of turnips, but there is a good deal of complaint of injury by lice. Mangels and carrots are not much grown this year, and they are also light in yield.

Joseph Martindale, Oneida, Haldimand: Early potatoes are a very poor crop, but late ones are very fair. There are no signs of rot as yet. Mangels and carrots are about half a crop, but turnips are a failure owing to drouth and the fly.

John A. Law, Stamford, Welland: Potatoes were dug in good condition, but are only about half a crop—on clay land they are not worth digging. Turnips, mangels and carrots are an average crop. A good many farmers lost their entire crop on account of drouth preventing the seed from germinating.

W. S. Howell, Sombra, Lambton: No potato rot has been heard of here, but the drouth was very injurious. The tubers are small and few in a hill generally, and are now (Oct. 31) selling at from 60 to 75 cents per bushel. Late potatoes came on after the rains began, and grew pretty well, but are knobby and scraggy. Turnips, mangels, carrots and parsnips are smaller than usual, for though the rains brought them on pretty well it was too late to counteract the effects of the drouth. Roots have all been cared for before the heavy frosts.

A. E. Wark, Plympton, Lambton: The potato crop is a failure in many parts owing entirely to the drouth. The yield per acre is small—from nothing to one hundred bushels. Farmers who have none should buy enough for next year's seed as the price will no doubt be high in the spring.

Frank Morley, Usborne, Huron: Potatoes are scarce and small. The bugs and dry weather combined almost ruined the crop. There is no rot. Turnips are almost a failure; there was not enough moisture to force the plants and the fly destroyed the leaves. Mangels are small but far better than turnips. Carrots are not large, but good.

Edwin Cresswell, Tuckersmith, Huron: Potatoes are a very poor crop. A few farmers had tolerably good crops where the land had been summer fallowed from sod the previous year, or where the land was naturally moist and very rich, but the majority of farmers will have to buy potatoes for table use and seed. Turnips, mangels and carrots are about half a crop, say 300 bushels to the acre. The failure of all these root crops is attributed to drouth. The root crops have been well secured.

Thos. Fraser, Huron, Bruce: The quality of potatoes is good, and the general complaint is that they are small in size and few in the hill, although some have had a splendid crop. Drouth injured the potatoes to the extent of about 50 per cent., but there is no rot. Turnips are a poor crop in general, but mangels are about an average. Carrots are not largely grown; they will be about three-fourths of a crop.

E. A. Carver, Albemarle, Bruce: Potatoes are very good in quality and fair in quantity, yielding from about 100 to 120 bushels to the acre. But for the drouth the crop would have been very large. Turnips are a complete failure throughout; I have not heard of a single success. The drouth gave the turnip fly every chance to demolish them. Mangels are also small, while carrots are good.

A. Stephen, Sullivan, Grey: The condition and quality of potatoes is good, but the crop is very light. The bug (which was very bad this year) and the drouth were the causes of the light crop. Turnips and carrots had a hard time to keep alive during the excessive drouth, but if favoured with a late fall we will have nearly an average crop.

Wm. Milne, Osprey, Grey: In some cases there is a good yield and fine quality of potatoes, but in the majority of cases the crop is deficient, especially in quantity. Turnips are small, but of good quality. Carrots are a good crop, and would have been extra had the weather not been so dry.

Geo. Cowan, Innisfil, Simcoe: Potatoes are a very small crop in general, but the quality is good. There is no rot. Turnips, mangels and carrots are also a poor crop, hardly worth taking up in some cases.

Wm. Wright, McGillivray, Middlesex: Potatoes have been a very variable crop. Some have what might be called a fair crop, whilst with others it is very poor. The tubers are small, but I have not heard of any being affected by rot. The yield will no more than supply the home demand. Our stiff clay in spring is not often in a favorable condition for the sowing of root crops, and consequently very little is grown.

James A. Glen, Westminster, Middlesex: I have just finished digging my potatoes. They have turned out about fifty bushels to the acre, and scarcely half of them are fit for market. There is no rot; the damage was done by drouth and bugs. Turnips are a failure. The seed started poorly, and the fly and the heat finished the business. Mangels sown early are about one-third of a crop. Carrots will be about the same. The root crop will be harvested early.

James Anderson, Zorra E., Oxford: Potatoes are variable: some are excellent, some are fair, and there are plenty of failures. It was too dry for them. Turnips have surprised every one, coming out a fair crop of sound roots. Mangels are good and sound, though rather small. There are not many carrots grown, but they are a fairly good crop. All will be secured in good order by the 5th of November.

James G. Pettit, Oxford E., Oxford: Potatoes are the lightest crop known for years. There was no injury by rot, but the failure is due to want of rain. Turnips and mangels, although not up to the average, have done considerably better than potatoes.

D. McCormick, Dumfries S., Brant: Potatoes are of good quality, though small. There is no rot; the injury was from drouth. Turnips are of good quality, but are not an average crop. Carrots are small. Potatoes and carrots are all secured (Oct. 28th); turnips are about half harvested and shipped to the other side.

Wm. Courtice, Fullarton, Perth: Potatoes are of good quality, but are a small crop on account of the dry weather. They have not been injured by rot. Turnips were hindered in their growth by dry weather and heat until the cool weather with rain came on, but they are still a small crop for the most part. Mangels are a moderately small crop. Carrots are rather small.

W. H. Stubbs, Peel, Wellington: Potatoes are of good quality, but are not an average for size, having suffered from drouth. They have not suffered any from rot. Turnips, mangels and carrots are only a half crop. In many cases turnips had to be plowed up after hoeing, from the effects of the fly and grasshopper, along with the drouth. The root crops are mostly secured in good condition, but the general shortage is greater than I remember seeing before.

W. C. Smith, Wilmot, Waterloo: Potatoes are of good quality. They made a second growth after the fall rains, but they are too small. The yield is very poor; on some clay farms they only got as many as they planted. Turnips are small and nothing like an average crop; the weather was too dry. Mangels are a pretty good crop. Most farmers have mangolds all in the cellar by this date (Oct. 28th), and we are just commencing with the turnips.

John Short, Luther E., Dufferin: Potatoes are a good crop, and of good quality. Turnips are small and are affected by drouth, as are also mangels and carrots. A part of the crop was well secured. Some were too late in taking in their roots which were caught by the frost, and consequently damaged.

D. B. Rittenhouse, Louth, Lincoln: Potatoes are not more than half a crop, but are of good quality. No rot is complained of. Turnips are a very light crop, and did not come up well. Mangels and carrots promised a heavy crop early in the season, but the drouth and hot weather injured them so that they made but little growth.

John Bremner, Flamboro' E., Wentworth: Potatoes were in many cases almost a failure, owing to the dry weather. Turnips in low lands are a fair crop, but on uplands not so good. Potatoes are mostly secured (Oct. 28th), turnips still remaining out.

Wm. McDonald, Esquesing, Halton: The potato crop is almost the poorest ever known in this section, in some cases not yielding more than double the quantity planted. There is not over the third of an average crop, but though small they are dry and palatable. There were less turnips sown than usual this season in this section, and what was sown will not yield over a quarter of a crop. Very few mangolds or carrots are grown. The roots will all be housed by the 1st of November.

Adam Alexander, Nassagaweya, Halton: The condition and quality of potatoes are all right but I don't know of more than one farmer who has above fifteen bushels on his patch of say an acre or a half. Drouth was the chief cause, and the bugs also were very injurious. Turnips are very small on land we would consider good for that crop, but are good on low, mucky soil. The root crop has been harvested in splendid condition.

John Campbell, Chinguacousy, Peel: Potatoes are a poor crop, but of good quality wherever there are any. Dry weather is the cause. Turnips are only half a crop. Mangels are better by being in earlier. Not many carrots are grown; the land is too clayey. Nearly all the roots are secured for the winter.

Angus Ego, Georgina, York: Potatoes are, as a general thing, small but sound. There is no rot, but the drouth has kept them below size. Turnips are of good quality, but small in size. Mangels are a better crop than turnips, and are not so small. Carrots are a good crop. Roots are nearly all up, and are being secured in good condition.

A. Forster, Markham, York: Small, but generally of good quality. It has been so dry that in some places on high ground there was not half a crop. Turnips are small generally, on account of some having to be sown the second time, and the absence of rain in the early part of the season. In most cases mangels have turned out better than had been expected; so have carrots. Nearly all the roots have been taken up and put away.

Thomas Cain, Scott, Ontario: Potatoes are rather small but sound where late planted, but where early planted are a larger size. They are more plentiful in ground where well cultivated and where the Colorado beetle was destroyed. Turnips are small but sound, and, with mangels and carrots, will be only about half a crop.

Wm. Windatt, Darlington, Durham: Potatoes are a very light crop, but sound and good. Turnips were damaged by drouth, but in addition the leaves are covered with myriads of lice, the tops are destroyed and the bulbs are not sound. Of course there are exceptions. Mangels are light. Carrots are the best root crop this year.

C. A. Mallory, Percy, Northumberland: Potatoes have been less injured by the potato bug this year than usual, and are small in yield and size. Many pieces of turnips are complety spoiled by lice, which took them before the rains came on. They are either now rotting in the field or must be fed at once. The crop generally will be a light one. Mangels and carrots are not much grown.

George N. Rose, Marysburg N., Prince Edward: Late potatoes are a good crop in a few localities, but early ones were small and scarce. There is a general scarcity in the township owing to the unprecedented drouth. There is no rot. Other roots are not raised to any considerable extent here.

George Marlin, Sheffield, Addington: The condition and quality of potatoes are good, but the yield is about one-third less than the average crop. The drouth was the cause. Turnips and other roots are about half a crop.

Robt. Anglin, Pittsburg, Frontenac: Potatoes in low lands are a large a crop, but are poor on high land; however, the township will have a surplus. I expect to see potatoes sell for less money in the spring than at present. There is no rot, and the quality is good.

Angus F. Bond, Storrington, Frontenac: Potatoes are good and dry, but small owing to the drouth. There are very few turnips grown, and these were injured in some parts by a small fly that made its appearance about the last week of September. There are very few mangels raised here, and those are smaller than usual. There are but a few carrots, and these are not up to the standard.

S. Chalmers, Wolford, Leeds and Grenville: Potatoes are not a heavy crop, but a very fine quality. No rot is reported. All root crops are light on account of the drouth, and turnips suffered greatly from the fly. All are secured in good condition.

A. Harkness, Matilda, Dundas: Potatoes are good and nearly free from rot, though they were materially injured in many places by the drouth. Where planted early, well cared for, and kept free from bugs the crop is adundant and good. Where put in late and poorly attended to it is nearly worthless. Turnips were injured by the "turnip louse." Mangels and carrots were injured by the drouth and are a light crop.

G. I. Morgan, Osnabruck, Stormont: The quality of potatoes is good, but the crop is not a heavy one, owing to the dry summer, and the work of the Colorado beetle, which have been very plentiful. Very few turnips were sown, and these were a total failure, as owing to dry weather they did not come up. Mangels and carrots are not generally grown, and are a light crop. All are taken up and stored.

Robert Wilson, Lancaster, Glengarry: Potatoes are a good crop on high, well-drained land, and the average yield will be about 200 bushels an acre; but on low land they are a failure on account of the heavy rain the latter part of May. Carrots are good and are not hurt in any way. We simply secure them dry and give them plenty of ventilation in the root-house or cellar until the weather becomes very cold.

Joseph Kyle Hawkesbury E., Prescott: Potatoes are excellent in quality. I don't think I saw a rotten potato during harvest. Lack of moisture rendered them smaller in size than usual. Turnips, carrots and mangels are cultivated here only in small patches. The turnip was injured by the fly, but the continued dry weather has done the most injury. The root crops have been harvested in good condition.

W. J. Summerby, Russell Russell: The potato crop is lighter than usual. The potatoes are small but of good quality. A smaller yield than usual for turnips, mangels and carrots.

Lewis Morton, Goulbourne, Carleton: Potatoes were in good condition when taken up. They are of good quality, sound and with no sign of rot, but small and thin in the ground on account of drouth. Turnips, mangels and carrots are all very poor, in fact, almost a failure. Mangels are the best crop of the three.

John Stewart, McNab, Renfrew: The crop on the whole is much below an average, but the quality is excellent on all but clay land. There is no rot, but the crop is not more than half an average one, owing to the drouth. All the roots have been hurt by the exceeding dry weather.

Wm. Paterson, Ramsay, Lanark: Potatoes are small and scarce, but were not injured in any other way than by drouth. Turnips are small and about a one-third crop. Carrots are better than turnips, as owing to the depth of their root the drouth did not affect them to such an extent.

Wm. Ramsay, Mariposa, Victoria: Early planted potatoes are good, although rather small on account of the drouth. There is no rot. Turnips are small but good in quality. There are very few mangels grown this year. Carrots are rather small. Most of the roots are up and ready for winter.

Wm. Maxwell, Laxton, Victoria: Potatoes are a complete failure. Off an acre of ground some have dug from two to eight bushels, and in one case off an acre and a quarter there was but one pailful gathered. The other roots are also a failure.

John Moloney, Douro, Peterborough: Potatoes yielded only 50 per cent. of an average crop, caused by the extremely dry season. The tubers are small, but the quality is first-class, in fact, we never had them better for the table. There was no damage to them except by drouth and the Colorado beetle, but Paris green fixed the beetle. Turnips, mangels and carrots are about a quarter of an average crop, owing to the very dry season. The crop is being secured under favourable circumstances.

S. Kettle, Glamorgan, Haliburton: Potatoes are of good quality, but are a very small crop. There is no rot. Turnips are almost a failure, and mangels and carrots are small. Almost all the roots are housed in good condition.

J. C. Hanley, Tyendinaga, Hastings: Potatoes planted early were destroyed by drouth. Early varieties planted late were started by rain about the first of September, and are a fair crop. The quality was excellent, and although but a few tubers they were of good size. Turnips, mangels and carrots are but half a crop.

John Hollingworth, Watt, Muskoka: All roots in this section have been greatly reduced in yield by the drouth and the beetle, and the quality is extremely variable. A near neighbour and myself have dug the finest crop of potatoes we have ever raised, but deficient in quality. Others have potatoes so small as to be worthless. One man put in twenty bushels of seed and got as a crop about thirty bushels of "marbles," and many others have had a similar return. Turnips, mangels and carrots are short in the yield. The success of my neighbour and myself in our potato crop I attribute to deep planting (plowed in) through cultivation during the dry time, and a determined stand against the depredations of the bug.

Peter McDonald Machar, Parry Sound: Potatoes were a very good crop generally, and there is only an odd potato injured by rot. Turnips are very good.

O. Dubois, Oliver, Algoma: Potatoes are a full crop and good for using. There is no rot. Turnips have not been injured by the fly. Mangels and carrots are good. All root crops have been taken up and secured.

COMPARATIVE YIELD OF FIELD CROPS.

The statistics of six years enable us to form a fair opinion of the agricultural productions of the country. The conditions of growth are never exactly the same for successive seasons, and consequently there is no certainty respecting the yield of crops. It is only from the returns of a number of years that an average of any field crop can be computed, and such an average must form the standard of comparison for a season's pro-

ducts. The following table gives the aggregate yield of our principal crops for the six years 1882-7 and the annual average of each for the period :

Field Crops.	1887.	1886.	1885.	1884.	1883.	1882.	1882-7.
	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.	Bush.
Fall Wheat	14,440,611	18,071,142	21,478,281	20,717,631	11,656,957	31,277,018	19,603,304
Spring Wheat	5,633,117	9,518,553	9,129,881	14,609,661	9,726,063	9,665,995	9,713,879
Barley	17,134,830	19,512,278	16,533,587	19,119,041	18,414,337	24,284,407	19,166,413
Oats	49,848,101	58,665,608	55,229,742	57,696,304	54,573,609	50,501,701	54,419,177
Rye	894,887	1,106,462	1,271,506	1,648,259	3,012,240	3,473,799	1,901,192
Pease	12,173,332	16,043,734	14,006,192	13,691,607	10,673,723	11,006,115	12,932,450
Corn (in ear)	8,404,752	10,805,309	10,741,391	12,935,889	.....	13,420,664	11,261,601
Buckwheat	1,025,353	1,678,708	1,530,675	1,484,570	.....	1,262,973	1,396,456
Beans	275,975	482,072	496,564	592,044	.....	409,910	451,313
Potatoes	10,678,000	16,012,358	21,091,144	27,546,261	16,400,782	18,432,145	18,360,115
Mangel-wurzels	5,695,761	8,787,743	7,660,729	8,655,184	6,252,015	7,711,420	7,460,475
Carrots	2,105,686	3,478,751	3,462,319	4,197,200	3,984,436	4,009,975	3,539,728
Turnips	31,413,456	47,061,053	41,137,735	44,406,363	29,879,354	35,359,331	38,209,549
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Hay and Clover	3,093,610	2,994,446	3,252,155	3,044,912	4,115,535	2,090,626	3,098,547

Two crops only show that the average of six years has been maintained, viz., pease and hay. In the case of pease, however, it must be remembered that the bug did not close its long reign of devastation until 1883, and that since its disappearance the area devoted to this crop has been largely increased. All the cereal and root crops are below the average, and, as appears by subsequent tables, the diminished product is in no instance wholly a result of decreased acreage. The wheat crop alone is less than the average of six years by 9,243,455 bushels, the barley crop is less by 2,031,583 bushels, and the oats crop less by 4,571,076 bushels; the fodder root crops, mangels, carrots and turnips, are also less than the average by nearly 10,000,000 bushels, and corn is less by 2,856,849 bushels.

Percentage of Total Yields.—A more detailed comparison of the total yields of 1887 with the six years 1882-7 is presented in the following table, by groups of counties :

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. L. and Ottawa.	East Midland.	Northern Districts.	The Province.
Fall Wheat	81	70	70	74	73	37	71	138	74
Spring Wheat	61	37	55	39	58	79	58	65	58
Fall and Spring Wheat	80	65	64	67	66	73	62	68	68
Barley	79	91	96	90	95	78	79	82	89
Oats	93	100	97	95	85	88	86	112	92
Rye	75	72	61	75	52	31	49	43	47
Pease	97	111	92	103	91	77	81	124	94
Corn	71	77	74	69	79	98	92	105	75
Buckwheat	78	119	93	67	99	58	77	94	73
Beans	65	71	87	38	50	59	55	35	61
Potatoes	38	58	57	60	57	65	51	87	58
Mangel-wurzels	78	82	60	88	63	68	83	181	76
Carrots	83	60	45	64	52	67	66	98	59
Turnips	84	81	75	85	84	68	86	82	82
Hay and Clover	92	118	112	94	89	106	95	125	100

In the preparation of this table 100 is taken as the standard crop, or average of the six years, and the figures show for groups of counties the proportion of the total yield of each crop in 1887 to the average yield of the six years. Hay and clover alone attained the standard, and in the Lake Huron, Georgian Bay, St. Lawrence and Ottawa counties and the Northern districts the standard crop was exceeded. Pease was only six per cent. under the standard, having gone over it in the Lake Huron and West Midland counties and the Northern districts. The lowest record was made by rye, which was 47 per cent. of a standard, and potatoes and spring wheat were each 58 per cent. Fall wheat was nearly uniform in its record, excepting in the Northern districts and the St. Lawrence and Ottawa counties, where the extreme points were reached, but as the crop is not much grown in those localities the averages for the rest of the province were very slightly disturbed. The barley crop gives its best results in the Lake Ontario counties, and here the yield was 95 per cent. of the standard.

YIELDS PER ACRE.—The following table gives the yield per acre of each crop by groups of counties in 1887, and for the province in 1887 and 1886, and the yearly average for the six years 1882-7 :

Field Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. L. and Ottawa.	East Midland.	Northern Districts.	The Province.		
									1887.	1886.	1882-7
Fall Wheat..... bush	16.0	14.9	17.0	15.6	17.4	14.5	16.9	24.3	16.1	20.4	20.2
Spring Wheat... "	10.6	8.3	10.2	9.1	12.0	14.0	11.3	18.1	11.6	16.5	15.5
Fall & Sp'g. Wheat "	15.7	13.8	13.8	14.5	14.9	14.1	12.8	18.6	14.5	18.8	18.4
Barley ..... "	20.1	23.4	22.5	23.8	22.6	21.6	19.8	23.4	22.3	26.5	26.1
Oats ..... "	31.1	32.8	28.6	32.2	29.0	27.4	25.2	31.5	29.6	36.2	35.7
Rye..... "	12.5	16.5	16.8	13.8	12.1	14.2	12.9	16.8	13.1	16.3	16.5
Pease ..... "	12.2	20.8	19.3	18.7	14.6	16.4	14.1	26.1	16.8	22.8	20.7
Corn (in ear) .... "	52.3	53.7	31.5	49.5	45.9	58.1	49.1	51.5	51.3	69.0	64.8
Buckwheat..... "	15.6	24.8	13.4	12.1	18.5	14.6	15.1	30.7	16.0	23.7	22.3
Beans ..... "	12.3	15.9	20.2	16.9	15.9	18.2	13.9	16.6	13.6	22.9	20.4
Potatoes ..... "	46.4	73.4	79.4	77.4	66.6	93.4	69.7	127.0	76.1	114.3	117.6
Mangel-wurzels.. "	257.3	351.6	266.2	372.7	305.8	250.4	248.3	218.8	317.8	483.6	430.9
Carrots ..... "	186.5	251.2	202.3	272.4	243.8	207.9	195.2	214.6	231.1	375.4	356.3
Turnips ..... "	254.7	307.9	277.0	338.7	286.0	219.6	235.2	250.5	298.2	475.7	389.9
Hay and Clover.. tons	1.32	1.54	1.36	1.43	1.28	1.35	1.15	1.35	1.36	1.35	1.41

The only crop in which the average yield of 1887 is greater than that of 1886 is hay and clover, but compared with the annual averages of the period of six years every crop shows a lower product. In round numbers, the yield of wheat, barley and pease is below the standard for six years by 4 bushels, oats and buckwheat by 6 bushels, beans by 7 bushels, corn by 13 bushels, potatoes by 41 bushels, turnips by 91 bushels, mangel-wurzels by 113 bushels, and carrots by 125 bushels.

RATIOS OF AVERAGE YIELD PER ACRE.—The ratios of average yield per acre in 1887 to the annual average of the six years 1882-7 (the latter being taken as 100), is presented in the following table :

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. L. and Ottawa.	East Midland.	Northern Districts.	The Province.
Fall Wheat	83	74	80	76	82	81	83	111	80
Spring Wheat	72	61	70	65	74	84	76	98	75
Fall and Spring Wheat	83	74	77	81	79	83	79	100	79
Barley	82	87	87	85	86	87	81	97	85
Oats	84	90	84	84	79	81	79	97	83
Rye	79	99	90	85	81	78	81	84	79
Pease	66	92	88	86	73	84	74	113	81
Corn	74	88	62	75	81	108	101	127	79
Buckwheat	77	121	78	61	85	61	67	112	72
Beans	64	76	110	82	72	73	72	72	67
Potatoes	42	65	65	68	62	72	56	83	65
Mangel-wurzels	67	80	62	81	70	66	65	83	74
Carrots	68	68	54	71	65	65	61	84	65
Turnips	73	79	68	83	74	67	71	82	76
Hay and Clover	91	111	106	93	89	98	92	113	96

Here the best records are made by the Northern districts, where with respect to five crops the yield of 1887 exceeds the average of six years, and while there are a few groups of counties in which hay and clover, buckwheat and corn, exceeded their averages of the period, there is no crop that reached the average over the whole province. Hay and clover reached 96 per cent., but the cereals range from 79 to 85 per cent., and the root crops from 65 to 76 per cent.

ONTARIO VS. AMERICAN STATES.—A comparison of the average yield per acre of cereals in Ontario and the principal grain-growing states of the American Union is presented in the following table for the six years 1882-7*:

Crops.		1887.	1886.	1885.	1884.	1883.	1882.	1882-7.
Fall Wheat..	Ontario...	16.1	20.4	24.5	24.0	10.6	26.3	20.2
	New York...	15.2	16.3	15.4	16.5	10.3	15.7	14.9
	Pennsylvania	9.7	12.7	9.7	13.6	13.2	13.6	12.1
	Ohio	13.1	15.0	10.2	15.3	10 0	15.1	13.1
	Michigan...	13.3	16.0	19.3	16.5	14.0	16.3	15.9
	Indiana	13.5	14.8	10.6	12.5	10.4	16.5	13.0
	Illinois	15.2	13.7	8.5	11.6	10.0	17.7	12.8
	Missouri	16.2	13.2	7.4	11.8	10.1	11.8	11.7
	California ...	11.0	11.6	9.4	13.2	13.0	13.0	11.9
	Kansas	9.6	11.4	10.6	16.5	17.5	19.9	14.3
Spring Wheat	Ontario...	11.6	16.5	11.4	20.2	16.6	16.5	15.5
	Wisconsin...	10.3	11.5	11.5	14.0	12.3	14.4	12.3
	Minnesota...	11.6	14.0	11.1	15.0	13.0	13.0	13.0
	Iowa.....	10.0	12.2	11.3	12.0	11.3	10.3	11.2
	Nebraska ...	10.1	11.0	11.3	14.5	15.5	11.0	12.2
	Dakota.....	14.3	11.5	12.8	14.5	16.0	15.9	14.2
Barley	Ontario...	22.3	26.5	27.7	27.3	24.3	23.6	26.1
	New York...	20.3	22.0	22.0	22.5	24.2	24.8	22.6
	Wisconsin...	18.5	22.0	26.5	23.2	24.1	25.0	23.2
	Minnesota...	19.0	22.0	23.8	24.2	22.9	23.3	22.5
	Iowa.....	19.0	22.5	23.0	22.3	21.9	22.6	21.9
	Nebraska....	21.0	22.0	23.4	21.0	22.1	23.0	22.1
	California ...	20.5	22.2	18.1	23.6	16.2	16.4	19.5
Oats	Ontario...	29.6	36.2	35.8	38.9	38.5	36.4	35.7
	New York ..	23.5	28.7	27.9	30.0	31.3	29.9	28.6
	Pennsylvania	25.5	28.7	26.3	27.9	30.6	27.3	27.7
	Ohio	30.0	32.4	37.3	28.0	33.9	26.4	31.3
	Michigan....	29.6	29.5	35.4	33.4	34.6	31.7	32.4
	Indiana	27.0	30.7	26.8	30.0	29.7	26.8	28.5
	Illinois.....	29.5	31.8	32.8	32.8	36.1	40.7	34.0
	Wisconsin...	24.2	28.4	33.8	33.5	30.4	29.6	30.0
	Minnesota...	30.0	34.4	34.9	35.2	33.1	35.7	33.9
	Iowa.....	30.5	34.1	33.8	36.7	34.1	31.0	33.4
	Missouri	29.3	23.4	22.3	26.7	28.7	30.1	26.7
	Kansas.....	26.6	26.4	31.8	35.0	39.4	27.0	31.0
	Nebraska....	27.5	29.5	34.3	33.7	40.0	23.5	31.4

It will be noticed that the harvest of 1887 had the effect of lowering the averages of every crop in Ontario and in each of the states, with four exceptions, viz.: Fall wheat in New York, spring wheat in Dakota, barley in Carlifornia and oats in Missouri. In fall wheat Missouri alone produced a larger yield per acre than Ontario last year; in spring wheat Ontario and Minnesota were equal, and Dakota nearly three bushels higher; in barley Ontario still kept the head of the list, although its average was 4.6 bushels less

* The states' averages in this table have been computed from the totals of acreage and product as given in the annual reports of the United States Department of Agriculture.

than the average of the preceding five years ; and in oats the states of Ohio, Minnesota and Iowa gave the highest averages, with Ontario and Michigan next in order as equals. But in all the grain crops the averages for the six years show that Ontario still maintains the pre-eminence. Its nearest rival in fall wheat is Michigan, but the difference in averages is 4.3 bushels per acre, while as compared with Pennsylvania, Ohio, Indiana, Illinois, Missouri and California the difference ranges from 7.1 to 8.5 bushels per acre. Kansas and New York are 5.3 and 5.9 bushels respectively below the average of Ontario. The spring wheat averages are much closer, and between Dakota and Ontario the difference is only 1.3 bushel per acre. Minnesota is 2.5 bushels less, and so on down to Iowa, which is 4.3 bushels less. The averages of barley range from 3.5 bushels in New York to 6.6 bushels in California below the average per acre in Ontario ; while the averages of oats range lower from 1.8 bushel in Minnesota to 9 bushels in Missouri.

FRUIT AND FRUIT TREES.

The yield of the larger fruits for the season of 1887, though not so abundant as was expected from the profusion of blossoms in the spring and the generally favorable conditions of the early summer, was, on the other hand, much better than might be inferred from the general tone of the reports made early in August. Despite the extremely hot summer the season was not an unfavorable one for the fruit grower, especially in those portions of the province in which any considerable attention is devoted to this branch of agriculture. Though the apple worm was present in a good many localities, yet the damage from that or other insect pests was not very serious, and there was a large surplus of apples—rather small in size it is true, but clean skinned and full flavored. The increasing importance of the export trade in this fruit and the greater attention which is being devoted to meeting the demands of the foreign market were emphasized by many correspondents. Wind storms in the early autumn, following the long drouth, were mentioned as having caused a premature fall of apples from the trees in some localities, particularly in the eastern part of the province. There are also complaints that apples are not keeping well owing to their maturing too rapidly. Pears, although in some cases rather stunted by the drouth, yielded well, and though the fruit was rather small in size it was otherwise of good quality. The peach crop was considerably better than it has been for some years back, and although the fruit was small in size it was found on many trees which for years before had borne nothing but leaves. Plums were generally reported a fine crop, and grapes more than fulfilled the favorable predictions of the August report. Cherries, on the other hand, were a general failure. The increasing prevalence of black-knot in cherry and plum trees, especially in old orchards, was the subject of frequent comment. Of the small fruits, strawberries were the most favorably reported upon, although the drouth shortened the season materially. Native raspberries, black and red, were badly affected by the heat, and in many localities dried on the bushes before a sufficient supply for local requirement could be picked. In the Northern districts, however, wild fruits, especially the huckleberry, were abundant.

Fruit trees were reported to be in surprisingly good condition in the fall, considering the trying season through which they passed, although in some places, particularly in the

eastern parts of the province, young orchards showed signs of succumbing to the long continued drain upon their vitality. The area in orchard is given in the following table for a series of years :

Districts.	1887.	1886.	1885.	1884.	1883.	Rate per 1,000 acres cleared.	
						1887.	1882-7.
Lake Erie.....	37,067	39,028	39,844	39,952	40,084	28.2	31.5
Lake Huron.....	19,874	19,946	19,925	19,952	19,907	16.5	17.6
Georgian Bay ...	11,129	11,097	11,555	11,577	12,228	11.2	12.6
West Midland...	37,402	38,304	40,593	41,628	42,800	16.9	19.0
Lake Ontario....	54,080	56,622	56,796	55,112	57,358	23.9	25.5
St. L. and Ottawa	12,401	12,375	13,145	14,320	14,760	5.6	6.8
East Midland....	8,911	8,635	8,838	9,780	9,950	11.2	12.5
Northern districts	578	609	570	516	363	5.3	5.4
Totals.....	181,442	186,616	191,266	192,837	197,450	16.3	18.1

These figures indicate a gradual decrease in the orchard area of the province since 1883, but in a case of small acreages it is difficult to make a satisfactory estimate for the whole province ; a difference of even a quarter of an acre in the returns of consecutive years will make a considerable change in the aggregate. The number of fruit trees imported during the past five years leaves it to be inferred that the orchard area of the country must be slowly increasing.

The appended extracts from correspondents on the fruit crops of the season of 1887 will be found unusually interesting and suggestive :

FROM THE MAY REPORT.

John Hooker, Mersea, Essex : There is a heavy blossom on apple, peach, plum and cherry, and if there are no late frosts there is good prospect for an abundance of fruit.

Edmund B. Harrison, Howard, Kent : Apples promise to be a fine crop ; peaches look promising. The deep snow favored the mice to girdle young trees.

John Bishop, Orford, Kent : Peach, plum, and the early varieties of cherries are out in blossom, and promise a good crop. Pears and apples are full of buds, but they are not out yet. Some few peach trees have died without any apparent reason for so doing.

Sheldon Ward, Malahide, Elgin : The outlook for fruit surpasses anything for years. The apple, pear, peach, plum and cherry are loaded with blossoms ; no injury by winter.

Samuel Maccoll, Dunwich, Elgin : Trees that blossom before leafing are in full bloom, and the leaves of the earlier kinds of wood are showing their robes of green. Plum, cherry and peach are in bloom ; all promise an abundant crop. Winter does not appear to have done any damage.

E. M. Crysler, Charlotteville, Norfolk : Apple trees are looking well ; pear, peach, plum and cherry are very full of bloom, and if we have no frost will be an abundant crop.

R. Watson, Windham, Norfolk : Apples promise well. Peach, plum and cherry are played out here. Small fruit promises well. The quince bushes are looking well. They have not suffered much from the winter.

J. R. Martin, Cayuga North, Haldimand : Fruit very promising. Very little affected by winter, especially grapes and peaches.

F. A. Hutt, Stamford, Welland : Apples and peaches not yet in blossom ; plum and cherry very promising. Very little damage is done in the winter compared with insect enemies of spring and summer.

John Dallas, Bosanquet, Lambton : Very good appearance of fruit. Peach, plum and pear trees just coming out in blossom. No injury by winter that I know of.

John L. Wilson, Enniskillen, Lambton : Cherry, plum, pear and crab trees were in full bloom on the 6th of May, and all other apple trees are almost in bloom to-day, a little ahead of any year I have ever seen in this part. In the fore part of the season it was cool and dry, but of late, since we got rains, the growth is remarkable.

Wm. S. Howell, Sombra, Lambton: Peach, plum, pear and cherry blossomed on 7th, 8th and 9th April. Woods are looking quite green now. The fruit trees look well; the buds are swelling slowly. Peach trees and small fruits not killed. The dry autumn left the buds small on all trees, but the winter has not been o extreme, being more even than usual. Apple trees will have lots of blossoms.

John Beattie, McKillop, Huron: Fruit trees look well. Where they were not broken by the ice storms of last winter, I think they were not otherwise injured.

John Morrison, McKillop, Huron. Fruit trees look well, and apples and cherries coming in bloom. An ice storm, first week in February, broke a great many trees of all kinds.

Hy. Doupe, Usborne, Huron: Cherry and plum trees are now in bloom. There were a good many of the lower branches of old apple trees killed during the winter season, and some of them were broken off by ice.

G. E. Cresswell, Tuckersmith, Huron: More forward than usual. Every appearance of a good crop. No injury, except from a severe ice storm which in some parts has done an immense amount of damage, large apple trees being split to pieces and destroyed. Rain froze as it fell, till even the small limbs were covered with ice from 1 to 1½ inches thick.

Hugh Murray, Bruce, Bruce: Cherries are in full bloom, and the earlier varieties of plums; apples are commencing to show blossoms. Fruit trees appear to have got through the winter all right.

Jas. Johnston, Carrick, Bruce: The trees show a greenish tint already, and on some southern exposures the leaf is half formed. Wintered all right, except some of the younger trees, which have been girdled by mice.

Samuel Dickson, Bentinck, Grey: Fruit trees healthy; the blossom just coming out on apples, plums and cherries. No injurious effects from winter.

Thomas Abercrombie. Euphrasia, Grey: Fruit trees look well; the winter did not hurt them. As far as I can learn, the prospect of a heavy crop is not good. It is generally thought it was so good last year it will affect this year's crop, though the pears I have myself are just coming out in blossom and promise well. The plums and cherries are blossoming good.

Geo. Binnie, Glenelg, Grey: Fruit trees of all kinds seem to have come through the winter in good order. Plum and cherry are in bloom, and apple blossoms are just opening. There is promise of an abundant crop.

John Darby, Vespra, Simcoe: The plum trees are in bloom, and the fruit buds on the apples appear plentiful, and have come through the winter favorably.

Richard Jolliffe, Dorchester N., Middlesex: Cherry and apple trees are looking as though we might expect a good crop. I have an Oxheart cherry in full bloom. Don't think the winter has hurt the fruit trees.

Jas. Alexander, Ekfrid, Middlesex: The apple, plum and cherry have wintered well, and have now a fine appearance, some of them being in blossom. Small fruits have also wintered well.

W. Wright, McGillivray, Middlesex: Apple trees in a few days will be in full leaf, and are full of blossom. Apple trees in a number of orchards are not in a healthy state; few peaches. As I stated in a former report, black knot had destroyed plums, and is now I see attacking cherries. I don t see that last winter injured fruit trees much, but an ice storm broke a number of branches.

James A. Glen, Westminster, Middlesex: Apples, peaches, plums, cherries and pears, are healthy and ull of bloom, except those unfortunate cherries afflicted with black knot. Some careless men deserve a esson for propagating this easily controlled pest.

Thomas Baird, Blandford, Oxford: Apple trees seem healthy, but the show for fruit is not very promising in this locality. Cherries give a better show, and so do pears, which are loaded with blossom. The winter does not seem to have hurt the fruit trees.

M. & W. Schell, Oxford E., Oxford: Apple trees are generally in a healthy condition, but will not be very full of blossoms this year. Peach trees are healthy, and bid fair for an abundant crop. Plum and cherry trees have suffered severely from black knot, but blossoms are plentiful on sound trees. Pears will, perhaps, be the best crop of any, judging from present appearances.

Jos. Snasdell, Flamboro W., Wentworth: Very few peaches grow here, and the cherries are almost all cut down. What remain are in full bloom.

Colin Cameron, Nassagaweya, Halton: The trees are healthier looking than for some years, and the prospects for a good fruit year is bright at present. I do not see any signs of damage done by winter frosts to any kind of fruit trees this year. No signs of any trees having died during the past winter from any cause. Caterpillars bad at present.

W. T. Patullo, Caledon, Peel: There are several varieties of apple showing blossoms; the later varieties are making but little showing. No peaches grown. Cherry are killed with black knot. The plums are fast going also with the black knot. I think the winter has been very favorable to fruit trees.

Joseph Sleightholm, Toronto Gore, Peel: Fruit trees appear healthy, although young apple trees are troubled with lice. Pears bid to be prolific.

George Evans, Jr., Georgina, York: Apple trees do not appear to do as well as they should. No peaches are grown here. Plum and cherry trees are affected with black knot. The winter does not appear to have affected the orchard seriously.

C. E. Lundy, Gwillimbury E., York: Apples look well. Plums are in full bloom. No cherries. Small fruits are looking thrifty. Orchard trees have stood the winter well.

John Foy, Scugog, Ontario: April was very backward and cold, but since May came in the weather has been beautiful, and vegetation has come on very rapidly. Fair prospects for apples; peach, not cultivated; plums, good; cherries, destroyed by black knot. Small fruits look very promising.

W. Windatt, Darlington, Durham: The winter has not affected the fruit trees. Apples and pears are thrifty. Plum and cherry trees are fast dying out with black knot. Peaches do not succeed here.

P. Hinman, Haldimand, Northumberland: Prospects fine for apples. No peach trees grown here. Plum and cherry trees are so affected by insects that there will not be much of a crop. Most of the cherries have been cut down.

John Riddell, Monaghan S., Northumberland: Apple, plum and cherry, abundant blossom; small fruits give indication of an average crop. Fruit trees wintered all right; but an unusual destruction by mice to all kinds of orchard trees, and also to young forest trees.

W. R. Dempsey, Ameliasburg, Prince Edward: Fruit trees are looking well; no appearance of any having been frozen. The snow watering through by rains in the winter, and then forming ice, seems to have destroyed the mice. We can expect at least a fair crop of apples, cherries and pears, judging from appearance of blossom buds.

W. N. Dollar, Fredericksburg, N., Lennox and Addington: Apple, plum and cherry trees are in fair condition for a crop. No peach grown here.

R. J. Dunlap, Pittsburg, Frontenac: Fruit trees of all kinds, by appearance at present, indicate a good fruit crop. The buds look healthy, and promise abundance of blosoms.

John Conn, Oxford, Leeds and Grenville: Apple trees have passed the winter well, but great numbers have been girdled by mice. I have lost about 2,000 young nursery apple trees, besides 50 bearing trees, the past winter by these destructive pests.

James Collison, Matilda, Dundas: Plum blows are just beginning to appear this morning (May 12th). Apple trees look well, but plums do not. Very few cherry trees here, and no peaches. The orchards appeared to winter well.

G. I. Morgan, Osnabruck, Stormont: Apple trees look well, and plums are in bloom. No peaches or cherries are grown here.

Jas. Cattanach, Lancaster, Glengarry: Fruit trees seem to be all right, although in some places the apple is ruined by the mice eating off the bark.

F. W. Langrell, Alfred, Prescott: Apple and other fruit trees were considerably broken and damaged by the ice last month, many being broken; but otherwise they are in average condition.

W. J. Summerby, Russell, Russell: But few apples are grown here, save crabs. Peaches and cherries are not grown, and only native plums. The winter has been a severe one, and weak trees have gone.

L. Morton, Goulbourn, Carleton: Many of the apple trees have been badly barked by mice; the ravages of these vermin have been greater than I remember ever before. No peaches here. Plum trees look well; so do apples where not injured as above; no cherries grown here, so of other fruit trees. Winter has not affected them injuriously to any great extent.

J. Grierson, Torbolton, Carleton: Fruit trees have been badly hurt by mice, which have gnawed the bark of a great many young trees and completely destroyed them.

Thomas Roche, Hagarty, Renfrew: Fruit trees look well and are just blossoming. They seem to have stood the winter well. Mice have injured some apple trees.

Robt. McLaren, Horton, Renfrew: The plum trees are in blossom, and other fruit trees seem healthy; but there is considerable complaint of mice damaging fruit trees last winter.

Andrew Wilson, Ramsay, Lanark: Fruit trees badly injured by mice.

Thos. Beall, Lindsay, Victoria: All fruit trees give promise of an abundant crop. Blossoms are just commencing to open out on apple and pear trees. The common red plum is in full bloom, other plum blossoms are just commencing to appear; a few strawberry blossoms can be seen; grape vines look exceedingly well. The winter has been more stormy than usual, but there has been no very low temperature. It has been a favorable winter for all the fruit crop.

J. M. Drummond, Otonabee, Peterboro': The fruit trees are looking well. The plum and cherry are loaded with blossom, and all have come through the winter all right.

Stephen Kettle, Glamorgan, Haliburton: Fruit trees are but few, but are looking well, it not having been a hard winter for them. We had very deep snow, frost all out of the ground in January, and snow kept on till near May.

J. Wilson, Dungannon, Hastings: Apples are not so full of blossom as last year. Common plums look well; the cherry trees here are few in number and all young. Mice girdled some of the young trees in the orchards.

E. Bray, jr., Stephenson and Stisted, Muskoka: Apple trees are looking very well. I think the previous winters killed all except the very hardiest trees. I hope that what trees are left will do well.

R. Blair, Carling, Parry Sound: Apple trees look well; peach, plum and cherry have not done well here.

F. W. Ashdown, Humphrey, Parry Sound: Plum trees in bloom; apples about out in leaf. Some tender branches are winter-killed, the hardier kinds are all right.

FROM THE AUGUST REPORT.

George Leak, Rochester, Essex: A great many fruit trees have died. There is promise of a good crop of apples, pears and peaches. We have no plums or cherries. Grapes are good, and small fruits are very good.

G. M. Baird, Harwich, Kent: Fruit is plentiful, but small, and of inferior quality. A great many apples are dropping off. Pears are plentiful but affected by the dry weather. There is a great crop of peaches, but they are very small and wormy, and altogether not a good sample; I might say the same of plums. Small fruits were plentiful, but on account of the hot weather the season was short and the fruit small in size.

W. Clarke, Aldboro', Elgin: Trees are doing as well as can be expected, except last spring's planting. They are dying in some orchards from drouth to the extent of 20 per cent. Apples will be small. Pears seems to do well so far, and will likely give a good crop unless the severe drouth continues. Peaches, where there is a live limb, have few on, but they are poor, little, inferior things. Plums are of no account, as the trees have been full of black-knot. Cherry trees are all right, but they gave a light crop. With few exceptions, there was a scarcity of small fruits.

H. J. Barber, Townsend, Norfolk: Apples are scarce and small, probably enough for local demand. The trees appear to be panting for moisture, and many of them will die if the drouth continues much longer. Pear trees are loaded with fruit, as are peaches, but they too are struggling for life. Small fruits, such as berries of different kinds, suffered in the same way, so that there was not more than half a crop. If it rains soon there will be enough fruit for local demand.

J. R. Martin, Cayuga N., Haldimand: Apples promised a fine crop, but are now dropping badly from the codlin-moth and drouth. Pears are very good; no blight. Peaches are not much grown, but are promising. Plums have been very badly affected by the curculio, and the law against the black-knot is not enforced. This should be seen to, and inspectors appointed. Cherries were a good crop, but the trees were badly affected by the black-knot and maggots. I keep my trees cut out and they do not suffer. Grapes are a very abundant crop. The heavy clay soil, where dry and underlaid with limestone, suits them to a charm. Small fruits did well excepting late berries, which were destroyed by the drouth. The supply of all fruits, plums and peaches excepted, is abundant this year, and the quality is fairly good.

John A. Law, Stamford, Welland: Apples are not an average crop, but pears look well. Peaches are small in size; so are plums. All the foregoing have been hurt by the protracted drouth. Grapes promise a fine crop. Small fruits an ordinary yield, but small in size, having been affected by the drouth.

M. Wattson, Bosanquet, Lambton: Apples are good in quality and plentiful although small on account of no rain. Pears are good, and not so much affected by the drouth. Early peaches were fine, but the late sorts are small and hard at present. Cherries were a very abundant crop. There will be a good yield of grapes, but they are drying up in places and require rain. Black, white and red currants were above the average. Strawberries were a short crop, and the season was soon over for want of rain. Black and red raspberries were an average, and would have done better but for the dry weather toward the end of June. Gooseberries were under the average both in size and quantity.

A. McD. Allan, Goderich, Huron: There is an abundance of fall apples in all sections, and generally of good quality and free from spot. Winter apples are not so large a yield. Baldwins are scarce, the Spy a small crop, Rhode Island Greening good, King of Tompkin's County good. American Golden Russet fair to good. Others are medium to poor in crop, but the quality will be good and all are clean. Even Snow apples are clean this year. Early apples are a fine crop this year; the Duchess of Oldenburg is always good. Pears are a good average crop. Cherries were good along the lake front, but the robins and cherry birds got a large share of the crop. Peaches are not grown much in this county, but whoever has a tree has it loaded this year. Plums are a large crop. The rot affected them badly and will thin out a great many kinds, such as Washington and Victoria. Grapes promise the best crop for many years; they are far forward, and with the heat continuing for a short while will all be ripened early. Small fruits were a good crop. The continued drouth will affect the size of samples of fruit, but this will be fully made up for in quality, I believe. Only for the codlin-moth all our apples would pack as perfect samples for foreign markets. If growers would continue in using the Paris green when the apple is formed from the blossom, the moth would be got rid of largely. This has been abundantly proven by several growers here this season. All fallen apples should be fed to stock also, and thus destroy a great many moths in the worm state.

John McMillan, Hullett, Huron: Apple trees are healthy, and the crop an average one. The fruit is likely to be small, but clear of black spots, and there are but few worms. Pear trees are healthy also, and an average crop. Plums, almost none; cherries, a small crop; grapes, plentiful; all small fruits plentiful. There is a sufficiency of small fruits for home use and of good quality. There will be a fair quantity of apples for export.

J. M. Monkman, Arran, Bruce: Apples are a fair crop, but some are falling off from the drouth. Pears, rather poor: we have no peaches growing. Black-knot has killed nearly all the plum trees in this vicinity. Cherries were good. Grapes were very good. Red and black currants very scarce. Berries generally were plentiful.

George Binnie, Glenelg, Grey: Fruit trees blossomed well, but much of the blossom failed to set, and the crop is not large. The codlin worm is worse than last year, but the drouth is doing more injury than anything else. Apples will be small. There was a small crop of cherries. Plums are good where there are any.

George Sneath, Vespra, Simcoe: Apples are a fair crop. The fruit is smaller than usual but free from spots; even the Snows are bright and clean. Pears, plums and grapes are not largely grown, but where grown are a fair crop. Plums have done better than for years past. There will be a sufficiency of fruit and to spare.

S. P. Zavitz, Lobo, Middlesex: Fruit promised well, but the drouth is doing it some injury. Apples are fair and well flavored, but under-sized. Pears are dropping before their time, and peaches have stopped growing. Small fruits were abundant and of good quality. Trees are looking well.

M. and W. Schell, Oxford E., Oxford: Orchard trees are thrifty as a whole, being comparatively free from insects, but fruit prospects are poor. Apples are not quite an average crop, but are of good quality. There is a large yield of pears, of good quality. Not many peaches are grown, but a good yield is promised where raised. There will be a fair yield of plums, but cherries will be a poor crop; the black-knot has destroyed most of the trees. Small fruits were scarce, and of indifferent quality.

Thomas A. Good, Brantford, Brant: Apples will be small; they are ripening prematurely. Pears are a fine sample so far, but are suffering from drouth. Peaches are drying up on the trees and will be worthless.

We have but few plums or plum trees now on account of black knot and insects, although there are a few fine samples of plums. Cherries have shared the fate of plums. Grapes are small and drying up. There was not an average of small fruit. There will be a sufficiency of fruit for home use and some for export. It will be small, but sound and good.

Wm. Courtice, Fullarton, Perth: Summer and fall apples are fairly plentiful, and of good size, but the winter kinds will be scarce. There will be a fair crop of pears. Not many plums are raised; they were almost entirely destroyed with black knot some years ago. Cherries are rather a light crop, as the trees are being injured by black knot. Grapes promised to be a good crop. There was a moderate supply of small fruits.

James Cross, Peel, Wellington: Fruit trees, such as plums and cherries, looked blighted and bad; cherries were a failure. Apples will be a fair crop. I think there will be a sufficiency of the sorts we have of small fruits.

John Gillespie, Dumfries N., Waterloo: Apples are a light crop, small in size and small in quantity. Pears are not much grown; neither are plums. Cherry trees have been hurt more by the black knot this year than in any previous year.

A. Henry, Mono, Dufferin: There will be plenty of apples and plums of a good quality. Cherries will be a fair crop. We have no pears or peaches.

James Stull, Grantham, Lincoln: Apples are about a half crop. Pears are quite plentiful, but rather small. Peaches are very plentiful, but without rain they will be very small. Plums are very heavily loaded, but they too will be small. Cherries were very plentiful. Grapes will be a heavy crop where the bug did not affect them. A great many berries dried on the bushes.

W. H. VanDuzer, Grimsby N., Lincoln: Apple trees are not troubled with worms this year and are looking well. The apples are fair, but not a heavy crop. Pears are as fine as I ever saw them, and a good crop; the trees are not much affected by blight. Peach trees are not generally in very good condition, but those that are are heavily laden; the early ones are small. Plums are an average crop. Cherry trees are failing; the common red are all gone with black knot, but the sweet cherries have not been affected. Grapes are a heavy crop and looking well. Small fruits were affected badly by dry weather. There will be an abundance of fruit, most of it of good quality.

Robert Inksetter, Beverley, Wentworth: This is the off year for apples here; still they are very nice, being free from spots and blemishes of any kind, but rather small. Pear trees are well loaded, and so are plums. A few peaches, but no cherries. There was an abundance of peaches at the first of the season, but they dried up lately.

John Husband, Trafalgar, Halton: The fruit crop will be light. There was a fine promise in the spring, and a large quantity of fruit set, but for want of sufficient moisture a great part has fallen off, and what remains is small. I speak of apples, pears, plums and cherries. The cherry trees are badly struck with black knot, and there is some in the plum trees, but not to so great an extent. Small fruits were under the average. There will be a sufficiency of fruit and a small surplus.

Wm. McKay, Toronto, Peel: Apples will be a small crop. They are falling off on account of the drouth, and are ripening too soon. Pears are plentiful, but the drouth is affecting them also. Plums are falling off. Cherries were a small crop; the black knot was very bad this season. Grapes are good, but the weather was too dry to bring the other small fruits to perfection, particularly the last of the crop. There will be enough fruit for local use, but not of as good a quality as usual.

D. B. Nighswander, Markham, York: Apples are scarce, but the quality is very good. Pears are scarce, but plums are a fair crop. Cherries have been killed by black knot. Small fruits are good, but the crop rather short from dry weather.

L. Weller, Scott, Ontario: Fruit trees keep dying off every year, owing to various causes—frost, drouth, black knot and general lack of attention and cultivation of the orchard. Pears are not much grown, but will be an average crop. Plums are the best crop for many years. Cherries were a good crop. We have very few grapes, but the vines were never more heavily loaded. Strawberries were good, but raspberries dried up on the bushes.

John Foott, Hope, Durham: Apple trees have suffered more or less from winter-killing. There was a fair promise of fruit, but the early apples are ripening prematurely and are falling off, and the winter fruit will be very small. Pears and plums are plentiful but small. Cherries are almost extinct from the black knot. Small fruits were plentiful. There will be a sufficiency of fruit, but it will be of rather poor quality.

Jonathan Dunn, Brighton, Northumberland: The condition of the apple tree is not very encouraging, many trees having died since last report, and from the appearance of the leaves many more will give out before another spring. Apples will be a light crop; fruit small, but sound and good. Pears, fairly good. Plums are a good crop, such as we have not had for many years; no curculio or other insects. No cherries, the trees were all killed by black knot. Grapes are not largely grown, but are a good crop. Small fruits were good, although much affected by drouth. I think there will be a sufficiency of fruit, and of good quality.

George N. Rose, Marysburg N., Prince Edward : The sample of fruit is good, but the trees are dying, both in body and branch, especially apple trees. There will be a small crop of apples and pears, but good samples. Plums are rather more than an average yield. There will be a scarcity of fruit, but good quality. Small fruits were a light crop.

C. R. Allison, Fredericksburg S., Lennox and Addington : The apple crop is the greatest failure we have had for years, although the trees look healthy. The bud must have been affected by the ice freezing on the trees in winter, as they did not blossom out right this spring. Pears are a very good crop.

Thomas Briggs, Kingston, Frontenac : Small fruits have been of good quality, and for a time were abundant, but the hot, dry weather greatly shortened the season, although there has been a fair supply in market. Grapes promise to be a good crop, and are well advanced. Cherries have been a failure, supposed to have been caused by the severe winter. Plums are a short crop, yet the trees look healthy. Apples and pears will be a moderate crop, and the apples are small in size.

J. Ferguson, Wolford, Leeds and Grenville : The principal fruits raised here are apples. They are looking very small, and not likely to be more than half a crop. Strawberries were a fair average crop. They are raised here to a considerable extent. There will be a great deficiency of fruit generally, not nearly enough to supply the demand, and the quality will be poor.

J. P. Fox, Winchester, Dundas : Apple trees suffered very much from the winter, a great many being killed, and the crop will be under the average. Plums are heavily loaded, but withering. No cherries this year. Small fruits will be a light crop. There is never a sufficiency of fruit grown here.

Robert Vallance, Osnabruck, Stormont : Apples are a poor crop, and all kinds of fruit are scarce.

Kenneth McLennan, Lochiel, Glengarry : Fruits are scarce, except plums, which are abundant.

F. W. Langrell, Alfred, Prescott : Fruit trees do not look well. Some of the trees were damaged by borers, and some by ice last winter. Apples and plums are small and poor. Crabs are a good yield. The supply of fruit generally will be small.

J. C. Edwards, Clarence, Russell : The fruit grown in this township is very limited in quantity. Apples are fairly good, and there are more plums than there have been for years. Grapes promise well, but as a general thing all fruits have been injured by the drouth.

James E. Craig, Gower N., Carleton : This is not much of a fruit growing region. Apples are a poor crop, and although plums promised a wonderful yield, fully one-half of them have dried up and are no manner of use.

H. A. Schultz, Sebastopol, Renfrew : Apples will be a fair crop. The plum trees are fairly loaded. Small fruits of all kinds were an extra good crop this year. There is not nearly the quantity of fruit raised here there should be ; the majority of people have not yet made an effort to plant fruit trees.

John H. Frazer, Drummond, Lanark : There is no fruit grown here except apples, plums and grapes. Apples are not very plentiful ; plums are medium, and grapes are good.

Thomas Beall, Ops, Victoria : Fruit trees of every kind are in a healthier condition than for many years past. The quantity of summer apples in this locality will be above the average yield ; winter apples will be few, but of good quality. Pears will be the best crop we have ever had here. There are but few plums this season, and no cherries. Grapes promise the best crop ever seen in this locality. Small fruits generally were rather under the average, but of good quality. A sufficiency of summer apples is grown here to supply the market, but winter sorts will be very much in demand. There will be a limited demand for grapes of the earlier varieties grown further south, but after the 20th of September or so, when the early grapes here will be ripe, there will be more than sufficient grown to supply this market.

Thomas Tellford, Ennismore, Peterboro' : Apples will be about half a crop, and the plum is completely destroyed by the curculio. Only a few grapes, which do not look well. Scarcely any cherries. There will be little enough fruit for home consumption.

John H. Delamere, Lutterworth, Haliburton : The fruit crop is very light, the dry weather having shrivelled up the fruit. Many trees are dying out. Small fruits were plentiful. There is not enough of the large fruits raised here to supply the local wants, a large quantity of apples, etc., being brought in every year from the front townships.

J. B. Morton, Huntingdon, Hastings : Apples are very scarce, and the fruit is small. Cherries are a failure. Plums are plentiful, but of poor quality. Small fruits were scarce, and poor in quality, owing to the drouth.

J. H. Osborne, Stephenson, Muskoka : There is not a great deal of fruit in this township. Crab apples and such large apples as Duchess and Northern Spy, seem loaded. Small fruits were an abundant crop.

John Butler, Croft and Hagerman, Parry Sound : There is not much large fruit grown here, except the crab and native plum, which are cultivated with good results. There were good crops of garden gooseberry and raspberry, and wild fruits such as the gooseberry, raspberry, huckleberry and cramberry, with a limited supply of strawberries.

FROM THE NOVEMBER REPORT.

Arthur J. Arner, Gosfield, Essex : Fruit trees are in fine condition for the winter, though the growth has not been great. Supply of fruit quite sufficient for home use, and all fruits of good quality. A surplus of apples, peaches and grapes.

James H. Brown, Colchester S., Essex : In old orchards the trees are beginning to show signs of decay, but young orchards are in a flourishing condition. Considerable injury to fruit by insects, not much by storms, blight or frost. A surplus of apples, peaches and quinces

James Cruickshank, Camden, Kent: Lots of apples to spare; thousands of barrels being shipped; of fair quality.

Thos. H. Coatsworth, Harwich, Kent: The condition of fruit trees is pretty good; peach trees are doing well. Apple trees are doing well except where the borers are working in some leaning trees. Apples were injured by winds blowing them to the ground; peaches were harvested with very little loss. There is far more fruit than can be consumed at home; thousands of barrels have been exported, some farmers in Kent raising as many as 1,600 barrels.

Samuel Maccoll, Dunwich, Elgin: The condition of all fruit trees grown here except the cherry is all right; cherry trees are being destroyed with black knot. Apples are abundant in this section and are being extensively shipped.

L. M. Brown, Dorchester, S. Elgin: Plum and cherry trees almost destroyed by black knot; cherry trees mostly cut down, balance ought to be. A small surplus of apples.

James Morrison, Walsingham, Norfolk: Fruit trees stood the season very well; not much damage by storms or blight; plenty of fruit for local supply and some apples to ship.

Arthur Simenton, Seneca, Haldimand: Fruit trees in fair condition; plenty for home use and some to spare. The worm did some damage to the apples. Plums an abundant crop.

Joseph Martindale, Oneida, Haldimand: All fruit trees are in good condition excepting cherry and plum trees; the black knot has nearly destroyed them. The supply of apples is more than sufficient for local consumption and large quantities of them are being shipped. All other fruits were good.

John A. Law, Stamford, Welland: Fruit trees are healthy. The apple crop is a poor one in our township but will be sufficient for local demands. Apples wormy. Pears and quinces a surplus.

W. S. Howell, Sombra, Lambton: Fruit trees appear to be in good condition. This year's planting was, however, well nigh ruined by drouth. Very few caterpillars among apples, but the codlin moth plays havoc with the fruit. On account of last year's loss by winds apples were picked earlier and laid on the ground till barrelling. The winds had shaken most of the wormy ones off before picking. The fruit is of good quality, *i.e.*, winter fruits, but fall fruit ripened rather early and does not keep well. Pears and peaches, grapes and other small fruits were fairly abundant but no surplus excepting a few pears.

James Watson, Moore, Lambton: The wood is well matured for winter. Codling moth injured the apple crop very much. The warm dry weather favoured the insect and checked the growth of the fruit. Still there is fully an average crop and sufficient for home consumption, and a considerable export trade done in some localities.

James Lovell, Brooke, Lambton: The apple crop is getting to be a very important item in the business of the farmers in this section, large and increasing quantities are being shipped every year. We have now had two good crops in succession.

Alex. McEwen, Hay, Huron: Fruit very good, though probably not so plentiful as last year; no damage by insects or frost. Hundreds of barrels shipped at the stations—principally apples.

Amos Doupe, Usborne, Huron: Apples this year were a good quality and very plentiful. There would in all probability be over 1,000 barrels shipped from this township for a distant market. Some farmers dispersed of 100 barrels each. The price obtained per barrel was 60 cents for fall and $1 for winter apples.

G. Edwin Cresswell, Tuckersmith, Huron: Condition of fruit trees as good as could be expected, but the ice storm of last winter has done injury to many trees, from which they will never recover. The codling moth has injured many varieties of apples; the Northern Spy, Rhode Island Greening and Baldwin are affected most. Some kinds—the Westfield, Seek-no-further, for instance—seem almost proof against the codling moth worm. Local supply of fruit more than sufficient; several thousand barrels of fine apples have been shipped to England and Manitoba from this neighborhood; also a few pears. Quality of fruit very fine—of fine color and sound.

James Weatherhead, Lindsay, Bruce: All our fruit trees are dying out; not ten bushels of apples in the township.

James Johnston, Carrick, Bruce: The loss has been heavy in the apple crop this year on account of wind storms—fully 75 per cent. of the crop blown off. Plenty of early and fall apples but there will be a scarcity of late ones. Those left on the trees—good. Surplus of plums.

Geo. Binnie, Glenelg, Grey: Fruit trees have done well. Fruit not so plentiful as last year, and smaller. There will be enough for local use but none to ship. The only insect pest this summer was the codlin worm. Fruit was entirely free from scab.

Walter Hartman, St. Vincent, Grey: The wood of fruit trees is well ripened. Codling moth injured the apple to some extent. Local supply of apples about sufficient: large surplus of plums.

David Saunders, Sarawak, Grey: For a number of years my apple trees have been infested with bark louse, so that a number of them died, but the rest of them have got over it and are throwing out new wood; they seem to be taking a fresh start. We have had very heavy winds which shook the apples badly. There is quite a surplus of apples.

C. Cook, Tucumseth, Simcoe: Fruit trees healthy. There was some injury to fruit by wind. A large surplus of apples of good quality.

Samuel Frazer, Tay, Simcoe: Fruit trees do not thrive well here; the winters are severe and spring frosts hurt them also. Insect pests kill as do the severe winters and spring frosts, but for all that there is an ample supply for local consumption; indeed it is hard to sell apples at all, and crabs one can hardly give away.

Malcolm Campbell, Ekfrid, Middlesex: Young fruit trees healthy; old orchards troubled with insects and partially destroyed by storms. Plenty of fruit for home use and a large surplus of winter apples selling at $1.10 per barrel.

James A. Glen, Westminster, Middlesex: Fruit trees are fairly healthy although dead limbs are numerous on old trees. The insect pests have damaged fully half the crop of apples and the equinoctial gale threw down thousands of bushels of them. The supply will probably be short for home use as shippers are more than busy, and the crop is changing owners very fast. All kinds of fruit are smaller than the average, and no surplus except apples.

Joshua Irvine, Lobo, Middlesex: Condition of fruit trees good. Considerable quantity of apples was blown off by wind. Plenty of small fruit. Apples were small but of good quality and are the only fruit of which there has been a surplus. More of them have been shipped than any previous year.

D. R. Calder, Nissouri E., Oxford: Fruit trees have all done well except cherries which are a total failure on account of the black knot. A large number have been cut down and nearly all those left should be. Surplus of apples of good quality.

James G. Pettit, Oxford E., Oxford: Fruit trees are in a healthy condition (excepting plum and cherry trees which are badly injured by black knot). A sufficient supply of fruit for local consumption and of fair quality with a surplus of apples, pears and berries.

C. Jarvis, Brantford, Brantford: The fruit trees have withstood all enemies fairly well, except black knot which is the worst enemy of all—bad on both cherries and plums. The enemy on cherry leaves and currants did not appear though the crop was below the average, especially the English varieties. Have just discovered a large English cherry tree killed by the borer the same as the peach borer; it was completely girdled by as many as fifty, mostly full grown. I never saw anything like it, though it bore a fair crop of cherries this year—the first I have seen in a cherry tree. The plum crop of all kinds was good, including German prunes and damsons, notwithstanding the black knot. Apples and pears plenty; grapes of all sorts in great abundance—the heaviest crop we ever had. On the whole it has been a grand season for all kinds of fruit.

F. R. Hamilton, Hibbert, Perth: Fruit trees are in good condition and plenty of fruit for home consumption. There has been a large trade in barrelling and shipping apples.

John Campbell, Blanshard, Perth: Many of the fruit trees are dying out, caused perhaps by insect pests and the severe ice storm of last winter. The supply is about sufficient for home consumption with a small surplus of apples for export in a few favored localities.

W. Brown, Guelph, Wellington: Apples very clear of any markings; good medium supply of superior quality.

Peter Winger, Woolwich, Waterloo: Summer and fall apples were very plentiful and quality good; winter fruit was not so plentiful; sufficient for local consumption.

John Cornelius, Garafraxa E., Dufferin: Fruit trees appear to be in a healthy condition, the summer has been favorable throughout. Apples are the only kind we can grow here with any success; not supply enough for home use.

John Secord, Grantham, Lincoln: Fruit trees are healthy and are doing very well where they are well cared for. The apple crop would have been an average had it not been for the codlin moth. He did his work well so far as getting over the whole crop was concerned. There will be quite a quantity for shipping; some very fine apples.

W. H. VanDuzer, Grimsby, N., Lincoln: Fruit trees are in very good condition for wintering. I notice no trees affected or damaged by insects, storm or frost; a few pear trees show blight a little. There is quite a sufficient supply of fruit of all kinds, and a large surplus in grapes, apples and pears. The fruit is all of excellent quality.

Erland Lee, Saltfleet, Wentworth: Fruit trees look well where the orchards were cultivated but where they were in sod or grain they look very bad: the leaves turned yellow long before the frost touched them No insects except black knot and codlin moth. Surplus of plums, peaches, grapes, pears and apples.

Adam Alexander, Nassagaweya, Halton: Young orchards that received any care are thrifty, but in all old orchards quite a number of large limbs are dead. I can't say whether it is an insect or injury to the limbs by standing on them while picking off the fruit, or old age. Local supply sufficient but not many apples to ship. Apples looked beautiful on the trees, but when picked were found to be very wormy. Surplus of plums; trees were literally broken down with fruit.

John Sinclair, Chinguacousy, Peel: Fruit trees in good condition. While the supply of fruit is sufficient for local consumption, there is scarcely any for export.

J. D. Evans, Etobicoke, York: Condition of fruit trees good. Some apples were injured by the codlin moth. The quality of fruit, especially apples, is the best for years. Surplus of grapes, pears and apples.

Samuel Taylor, Mara, Ontario: Fruit does not count much in this locality; trees do not thrive well. Few farmers have more fruit than they can use at home—a great many not that even.

H. A. Walker, Hope, Durham: Condition of fruit trees very good. No loss from insects or other causes; plenty fruit for home consumption, and a large quantity of apples has been shipped.

Robert Hodge, Clarke, Durham: Fruit has been very good. An early wind storm blew down a great many apples. Plums and grapes were very plentiful, a large surplus of both, and a large shipping business to Montreal and Europe.

John Miller, Haldimand, Northumberland: The supply of fruit is equal to the demand, and of apples there is a large quantity for export. The Russet, Baldwin and Spy are much enquired after for shipment to England. Plums were an immense crop.

Luther Platt, Athol, Prince Edward: Condition of fruit trees generally healthy, except from attacks of borers; some orchards are nearly ruined from this pest. Great loss of apples from wind storms. Plenty of fruit for consumption and surplus of berries and apples.

C. R. Allison, Fredericksburg S., Lennox and Addington: Fruit trees appear to be in a healthy condition, the insect not doing so much damage to plums and gages as other years. The apple crop was below the average; the cause is attibuted to the ice freezing on the trees in winter and spring. The quality is good with a surplus over local demands.

John Elkington, M.D., Palmerston and Canonto, Frontenac: All fruits did well especially apples and grapes. No curculio. Plums and raspberries burnt up by drouth; strawberries very good.

R. G. Murphy, Crosby S., Leeds and Grenville: Fruit trees are in very good condition. Very little loss from insect pests, storms, blight or frost. The supply of fruit is sufficient for local consumption, and the quality good; small surplus of apples and plums.

A. Harkness, Matilda, Dundas: Condition of fruit trees good; the wood is well ripened and the leaves have fallen until the trees are nearly as bare as forest trees. Only little damage to fruit from any cause. Local supply sufficient except late winter apples; surplus of fall and early winter apples.

Donald F. McRae, Roxborough, Stormont: Condition of fruit trees very good excepting young trees transplanted in the spring, they suffered from drouth. Local supply not near sufficient; quality very inferior—small, poor in flavor and hard to keep. No surplus except of crab apples.

Robert Thistlethwaite, Hawkesbury W., Prescott: The fruit trees are in very good condition. The crop was unusually light, but the supply is sufficient for the consumption of this township. There was a surplus of no particular fruit.

J. C. Edwards, Clarence, Russell: Apple trees not injured in any way; crop fair average and of good quality, but not sufficient raised for local consumption.

Lewis Morton, Goulbourn, Carleton: Fruit trees that have not died are in a fair condition. A number of apple trees have died from the ravages of mice last winter, they having taken the bark off under the snow. Supply not sufficient for local wants, and quality poor.

P. E. Bucke, Ottawa, Carleton: Fruit trees are in good shape for next season. There is not sufficient fruit of any kind grown here for local consumption. Grapes were especially fine; owing to the warm, dry summer they ripened well. There is no finer place in Canada for growing the earlier varieties of grapes than the Ottawa valley.

W. Ringsliben, Admaston, Renfrew: Great damage by mice last winter. It is up hill work trying to grow fruit here. Not enough for local consumption.

A. F. Stewart, Beckwith, Lanark: Fruit trees look well except newly planted ones; the dry summer was too much for them. About one half of the fruit fell off with the heat before coming to maturity. Just about enough for local consumption.

Thos. Beall, Ops, Victoria: Fruit trees of all kinds are looking well at present but will probably suffer greatly during the coming winter, unless heavy rains set in before the ground freezes. The loss by insect pests, storms, blight or frost, less than usual. Grapes not grown in sufficient quantities to supply this market. We have plenty of summer and autumn apples for local consumption, but not nearly enough of winter varieties. No surplus, except of fall apples. Most of the fruit produced here is of the finest quality.

Thos. Tellford, Ennismore, Peterboro': Fruit trees are in fair condition. Loss from all causes about one-third of an average crop; our trees did not blossom in spring the cause of which we cannot comprehend. Sufficient for local supply, and a surplus of apples. Quality good; not so many worms in the heart as in former years.

John Moloney, Douro, Peterboro': Fruit trees are in good condition to stand the winter, as the wood has ripened well. Apples were damaged by codlin moth to the extent of about 25 per cent. of the crop, and a wind storm on the 7th of September destroyed one half of the crop. Plums were entirely destroyed by the curculio. No surplus of any fruit except wind fallen apples; other fruits scarce.

Chas. R. Stewart, Dysart, Haliburton: Little fruit grown here. The wild fruit such as raspberries were not more than half the usual crop, owing to drouth.

Anson Latta, Thurlow, Hastings: Fruit trees look as well as usual, and there was no material loss of fruit from any cause. Surplus of apples, pears and plums; quality—smaller than usual.

Frederick N. Toye, Draper, Muskoka: Not much fruit grown here, a few early crabs and apples being all. They have done well this season. No surplus.

Peter McDonald, Machar, Parry Sound: The only varities of fruit trees that seem to stand the climate are the Duchess of Oldenburg, the Tetofsky and the Wealthy, and the several varieties of crabs; all other kinds die in the spring when the frost bursts the bark. The cherry will not grow here. Frost is the only enemy we have to fear. No surplus, and not enough even of wild fruit for home consumption.

W. T. Hubbert, Campbell, Algoma: Fruit is fair, although fruit trees do not do well here. We don't grow near enough for home consumption.

THE NEW CROP OF FALL WHEAT.

There appears to be about the same area devoted to fall wheat for 1887-8 as in the previous year. Summer fallows afforded an excellent seed-bed despite the rather dry condition of the soil, and favorable reports are given by those who sowed their grain on fallowed land. Stubble land, however, owing to the drouth, was not got into good condition, as it was hard to plow, and on clay it was almost impossible to get it into

anything like good shape for the reception of seed. In many districts the continued drouth literally baked the clay so that plowing was difficult, and where wheat was sown under such conditions a considerable portion of it did not come up at all, while that which did germinate was from two to six weeks in appearing above ground, owing to the absence of rain. The early harvest allowed farmers to pay more attention than usual to the preparation of their fields for the new wheat, and in counties in the west where conditions of soil were favorable a large area is reported; but in less favored localities many waited for weeks for rain before they would sow, and some in so doing permitted the season to pass by without getting in their grain at all. The reports from western Ontario, where the greater part of the fall wheat of the province is grown, were on the whole favorable as to progress in seeding and the general condition of the crop, and the appearance of the fields was said to be about up to the average. In eastern Ontario fall wheat is not grown to a great extent, although some correspondents note an increase in the acreage. There are a few complaints from western counties of the Hessian fly, and the wire-worm has been at work on sod given to fall wheat, but the great majority of correspondents report little or no injury so far from insects. Indeed one or two correspondents take satisfaction out of the fact that while the drouth has been very severe on the crops of 1887, it apparently had an equally hurtful effect upon the insect pests. The new crop entered the winter hardly as far advanced as usual, but on the whole in fair condition, though some correspondents expressed a fear that the crop would hardly be able to successfully withstand the test of a severe winter.

FROM THE NOVEMBER REPORT.

George A. Wintemute, Maidstone, Essex: There is not more than two-thirds as much sown this fall compared with the recent crop. The ground could not have been in a better condition, and the appearance of the crop is first-class. The Hessian fly has made its appearance in some fields, but the frost has put a stop to their present ravages.

Arthur J. Arner, Gosfield, Essex: From what I can learn from observation and enquiry the acreage is somewhat increased. The ground was in excellent condition, and wheat never looked in better condition than at this season. No damage has been done by insects so far.

S. McDonald, Orford, Kent: The acreage of new fall wheat is about the same as last year, and is the best looking crop I have ever seen in this section. It is of medium growth but very healthy and fresh. I seldom saw it so free from injury of any kind.

Samuel Maccoll, Dunwich, Elgin: The acreage of new fall wheat is about the average, and the ground was in good order at seeding time. The appearance of the early sown is fair with the exception of a few fields where the Hessian fly is at work, but most of the late sown is suffering from dr. ith. Where wire-worm is in the soil it is doing damage, on account of the dryness of the season.

H. J. Barber, Townsend, Norfork: The acreage of fall wheat sown is about the same as last year. The clay ground was so dry that the wheat was a long time coming up, but it came up all right after the rain. On sandy and loamy soil the crop looks well, but on clay it is late. Have seen no injury by worm or fly.

V. Honsberger, Cayuga, Haldimand: The acreage of new wheat is about the same at that of last year. The ground was in fair condition as far as tilth is concerned but very dry. The top is rather small to withstand a winter successfully. No injury has been reported from insects.

Wm. Hedges, Walpole, Haldimand: There is more fall wheat than usual sown here, owing to the early harvest enabling farmers to get at it earlier than usual. Binders also help the work on. The ground was very dry for seeding but it worked very well. Wheat has very little top, but it has so far recieved no injury from insects.

John A. Law, Stamford, Welland: The acreage of fall wheat this autumn is about one-fifth short of the average. The ground was dry at seeding, and the crop does not look so well as in former years. No injury was done to the wheat by the fly, but it was spotted on clay land by drouth.

J. W. Overholt, Wainfleet, Welland: The acreage of fall wheat sown this year is considerably greater than last year's. The ground was dry at early sowing, but rains in the first week of September rendered the ground excellent for seeding. The appearance is good.

Simon Burns, Dawn, Lambton: The acreage of fall wheat sown is a trifle over that of last year. The condition of the ground at seeding time was very good, the rains about the 4th of September being very favorable. The early sown looks good. The wire-worm is very destructive in fields where there is any remains of sod, and the Hessian fly is working on early sown fields, so much so that I have heard of some fields being resown.

W. S. Howell, Sombra, Lambton: I believe there is more wheat sown this fall than last. The ground was in excellent working condition, being moist and mellow. Early sown has a heavy top, and late sonw is getting on fairly. It all came up quickly. Most of the wheat was sown earlier than usual, and considerable was sown on stubble, only gang plowed or cultivated with spring tooth.

Alex. E. Wark, Plympton, Lambton: I believe there is fully as much wheat sown this fall as last. The ground was in first class condition, but want of rain and warm weather has kept it back. Very little wheat is in good shape for a hard winter. I can't say that much injury has been done by insects, except by the wire-worm in some places.

Alex. McEwen, Hay, Huron: There is an average of fall wheat sown as compared with other years. The ground was in fair condition, considering the dryness of the season. The fall wheat looks well at present, but in some places the Hessian fly is doing some damage. The fine rains of late will help to stop its ravages.

John Wright, Goderich, Huron: With a few exceptions the acreage of fall wheat sown is about the same as last year. The ground at seeding time was very dry and hard on heavy land, and people were delayed waiting for rain. Summer fallows were in good condition and moist. The present appearance of fall wheat is backward on account of cold weather, but seems healthy. I have not seen any injury by the Hessian fly or other insect.

Peter Clarke, Culross, Bruce: About an average of fall wheat is sown. Seeding was finished somewhat earlier than last year. The ground was very dry, but the seed bed was good. The braird looks strong and healthy, and there is no injury from any insect pest.

Hugh Murray, Bruce, Bruce: The acreage is about ten per cent. less than last year. The ground was too dry at the time of sowing for a vigorous growth, and consequently fields presented a patchy appearance. The appearance at present is not up to the average. No injury is reported from insects.

David Saunders, Sarawak, Grey: There is not as much fall wheat in as usual. The ground was very dry and lumpy at seeding, but since sowing there has been considerable rain and crops are looking very well.

James Brodie, Artemesia, Grey: There is considerably more fall wheat sown this fall than last. The land, more especially summer fallow, was in excellent condition. Most of it was sown early. Farmers are beginning to see that it will not do to sow fall wheat just before the snow falls. Although the ground has been very dry, it looks well.

J. K. Irving, Innisfil, Simcoe: I think there is about the same quantity of fall wheat this year as last. At the time of seeding the condition of the ground was very dry. Some looks well on fallows, but barley and pea ground is far back.

Archibald Thomson, Orillia, Simcoe: There is a smaller acreage sown this year than last. The ground was very hard and dry, the seed did not come up evenly, and it was thin in most places. The fine rains in the last week of September and the first week of October have made a great improvement.

Wm. Sutherland, Gwillimbury W., Simcoe: There has not been quite as much sown as last year, as much of the stubble ground was too hard to plow. The condition of fallows at the time of seeding was good, but owing to the dry fall, nearly all wheat has but little top. If it does not winter kill it may be a good crop.

Richard Gibson, Delaware, Middlesex: The condition of the ground at the time of seeding was perfect; I never saw it better. The plant is generally healthy, but not nearly of as large a growth as usual at this season. The Hessian fly and the wire-worm have done damage in spots.

Wm. Jamieson, Westminster, Middlesex: The acreage sown this year is less than usual. The price being paid seems to give no inducement to grow wheat, as spring grains are more profitable. The ground at seeding was very dry and lumpy, but light genial showers brought the braird up very soon after sowing. The present appearance is very fair. I have examined a good many fields and could detect the operations of the Hessian fly, but on a very small scale. There seems to be no other enemy at present.

S. C. Tuttle, Oxford E., Oxford: About the same acreage of fall wheat as last year. The soil at time of planting was in very good condition though rather dry. It has not made as vigorous a growth as at some seasons, but it is looking healthy.

James Anderson, Zorra E., Oxford: There has been rather more fall wheat sown this fall than usua The land was in first-class condition, as there was plenty of time to work it thoroughly. It looks well, and is well rooted, as the weather has been dry and fine.

Fred Axon, Onondaga, Brant: There is about the same acreage of new fall wheat as last year. The condition of the ground at seeding was dry and hard, and it was worked with difficulty into a seed bed. The present appearance of the crop is poor on account of drouth.

Thos. A. Good, Brantford, Brant: The acreage of fall wheat is perhaps ten per cent. more than that of last year. The ground was very dry but mellow, and made a fair seed bed. Some is looking well on summer fallow, but on the whole the top is small compared with other seasons.

Thos. Page, Wallace, Perth: Taking my neighbors around me as a test there is not as much wheat sown this fall as last season—it is at least one-third less. The period of seeding was most favorable, and rain came just about the time the plant was coming up. The crop now looks well.

John Campbell, Blanshard, Perth: The acreage of fall wheat sown this fall is twenty per. cent. less than last year. The ground was in good condition at the time of sowing, and the crop now looks healthy, although it has not made so rapid a growth as last year.

J. A. Brandon, Maryborough, Wellington: The acreage is considerably less than last year. At the time of sowing, fallows were in first-class condition, and a considerable number of clover sod and pasture fields were manured and plowed once and sown in good condition though hard to plow. The crop is rather backward an uneven.

W. H. Stubbs, Peel, Wellington: The acreage of fall wheat sown is about the same as the crop harvested. The condition of the ground at the time of sowing was very dry, not making a good seed bed; in fact in many places, except in summer fallows, a good deal of seed grain has not germinated. The present appearance of the crop is very backward, as there has been very little growth.

Edward Halter, Waterloo, Waterloo: About the same number of acres of fall wheat has been sown as usual, but owing to the dry season it could not come up, and it is in a poor condition for winter. Much of the seed did not germinate until October, after the rains. Summer fallows look better, but they are weak too.

Robert Dickson, Luther E., Dufferin: There has been less fall wheat sown this fall than last. The ground was very dry at seeding time and the crop came up unevenly and thin.

John Short, Luther, E., Dufferin: There has been rather more wheat sown this year than last. The ground was mellow and dry, but the wheat has a poor appearance now.

James Stull, Grantham, Lincoln: I do not think there is as much sown this year as last, but the difference is very light. The ground appeared to be in fine condition to receive the grain except that it was too dry. The field are very spotted and the plants are small for the time of year. The Hessian fly was very plentiful before the frost on the 12th of October.

Melvin Moyer, Clinton, Lincoln: There is not as large an area sown as last year. Owing to the drouth the land was heavy, and it was not got into good condition at seeding, except on fallow land. There are many fields of fine looking wheat although it is short. Some was not sown until late in September, and some even in October, and such is not looking well. On the whole it is not in as good a condition for winter as it generally is at this time of year. I have seen no appearance of the Hessian fly.

Robert Inksetter, Beverley, Wentworth: The acreage is about the same as last year. The ground was too dry, except where it was summer fallowed. Where the land was fallowed and sown early the plants look fairly well, but on stubble ground it looks thin and the plants weak.

Wm. McDonald, Esquesing, Halton: The acreage sown is about the same. The ground was very dry during seeding. On land that was summer fallowed it generally looks well, but what was sown on stubble land has not enough top owing to the dry weather.

Wm. Kersey, Toronto Gore, Peel: Probably 75 or 80 per cent. of last year's acreage. The ground at the time of sowing was very dry, and it was almost impossible to plow stubble ground. The plant is very small and thin on the ground as considerable of the seed never grew.

Peter McLeod, Chinguacousy, Peel: There is about the same acreage of fall wheat sown as last year. With regard to the seed bed: while the ground was excellent there was no moisture, and consequently the seed lay in the ground for weeks until October rains came, which caused it to start. The prospects of fall wheat are not very bright; it is very small now, and some is still coming through the ground. Some fields that were soon early have rotted on clay, but the crop has fared better on sandy soil.

F. C. Sibbald, Georgina, York: The new crop of fall wheat has a smaller acreage than usual. There was little or no summer fallowing on clay farms owing to the drouth, but on light soils the ground was in excellent condition at the time of seeding. It was a good year for killing weeds! The present appearance of fall wheat is excellent. The gentle showers during the first part of October were all that could be desired.

James H. Birchard, Scott, Ontario: The acreage is apparently more than that of last year. The ground was very dry and many fields did not sprout for two weeks after sowing. The appearance of the growing crop is as good as last year, as it was warm later than usual.

Wm. J. Grandy, Manvers, Durham: I think there is rather more fall wheat in than last year. Owing to the dryness of the season the crop in most instances is very backward in growth.

C. A. Mallory, Percy, Northumberland: The acreage of fall wheat sown is about the same as that of last year. The ground was very dry at the time of seeding. The crop appears to have made less growth than usual, but it looks fairly well.

George N. Rose, Marysburgh N., Prince Edward: The acreage is a little less than last year's. The condition of the soil at the time of sowing was bad. Owing to the drouth the ground was dry and hard, and it was almost impossible to get a good seed bed. The crop looks very well at present. The late rains and warm weather are making a very good top.

John Sharp, Ernesttown, Lennox: There has been much more fall wheat sown this fall than last year. The ground was dry, yet in very good condition at the time of sowing, and the present appearance is good.

Alex. Ritchie, Storrington, Frontenac: Not much fall wheat is sown here; there is about the same breadth as last year. The ground at the time of seeding was hard and dry and it was impossible to get a good seed bed. The fields look well, but are about two weeks behind in growth. Wheat was never sown so late as this year.

R. G. Murphy, Crosby S., Leeds and Grenville: There was less fall wheat sown this year than last. The condition of the ground was bad, it was dry and baked except on summer fallow. Wheat on summer fallow looks fairly well, but has been injured by the Hessian fly.

James Collison, Matilda, Dundas: There is not much fall wheat sown here—about the same as last year. The ground was in very good condition for sowing, but it has been so dry, there has not been much growth.

Donald F. McRae, Roxborough, Stormont: The acreage given to fall wheat is less than half that of last year, it was too dry to plow. The crop looks very late and weak to stand the winter. I never knew the fly to injure the wheat in this section of the country.

Wm. Ferguson, Hawkesbury W., Prescott: There is not as much fall wheat sown this year as last, as it was impossible to plow the stiff lands here until the past week for want of rain.

R. Serson, Fitzroy, Carleton: Fall wheat is a thing of the past here. There has been so little sown it is hard to tell of any damage.

Benjamin McKeracher, Bathurst, Lanark: There is very little sown, the ground was too dry. What little is sown looks poor and backward.

John H. Frazer, Drummond, Lanark: There is about the same extent of fall wheat sown as last year. The ground at seeding time was so dry that the grain did not sprout in some clay until about six weeks after it was sown. It is still very backward on account of the lack of rain in October.

Wm. Maxwell, Laxton, Victoria: The acreage is perhaps a little less than last year. The ground at the time of sowing could not be drier, and the seed did not appear until about the first or second week of October. It looks well now but is very backward.

A. R. Kidd, Dummer, Peterborough: I think there is a large breadth sown this fall, as the farmers are beginning to discover it stands the drouth best, and that by sowing more fall wheat there is less hurry in the spring seeding, and as a result better cultivation. The ground at seeding was dry, very dry. Some wheat sown broadcast did not all come up for three weeks. Where sown deeply in drills it came up in but little more that the usual time. The present appearance, everything considered, is good.

John Moloney, Douro, Peterborough: The acreage of fall wheat sown is about the same as the crop harvested this year, but considerably below the acreage of 1886. At the time of sowing the ground was in first-class condition with regard to cultivation, but so dry that a great deal of the seed did not germinate. The present appearance of the crop is very backward.

S. Kettle, Glamorgan, Haliburton: There has been more fall wheat sown than last year. The condition of the ground at sowing was exceptionally good though perhaps a little too dry. The present appearance of the crop is very good.

J. C. Hanley, Tyendinaga, Hastings: There is about the same acreage as last year. The ground was very dry at seeding. The summer fallows were in good order, but many of the fields intended to be sowed were so dry and baked that getting them in order was not practicable. The crop is now in a rather backward condition.

Edward Bray, Stephenson, Muskoka: There is more fall wheat sown this year than last. The ground was in good order at the time of sowing, and the crop looks very well at present.

Peter McDonald, Machar, Parry Sound: A slight increase in the acreage is noticeable, but no one seems to have sown over five acres. The ground at time of sowing was in fair condition. The crop is now (October 28), about two inches high.

W. T. Hubbert, Campbell, Algoma: More fall wheat than usual has been sown this year. The ground was chiefly new land and was in good condition, and the crop looks very well. The Hessian fly is unknown here.

THRESHING, MARKETING AND FALL PLOWING.

The remarkably early harvest permitted threshers to get to work a week or two earlier than usual, and this coupled with the increasing use of steam threshing machines and other mechanical aids to separation of the grain from the straw has enabled an immense amount of grain to be threshed by the time correspondents sent in their reports (October 25). In the majority of cases threshing was reported as about completed, especially those standard cereals, wheat, oats and barley. Marketing, as usual, was much affected by local conditions and individual needs. In many places farmers were holding back their wheat for an advance in price, while some of their neighbors were selling on account of pressing calls for cash. In some of the eastern and northern counties correspondents report that wheat was generally held for local use, and that there would be barely enough to supply the home market. Owing to the decrease in the yield of wheat in the province, less than usual was moving or was likely to move during the winter. The rise in the price of barley in October made the market for that cereal very lively, and from all points came reports of a great movement in that grain. An immense amount of barley changed hands by the close of October—in fact the bulk of the saleable crop appears to have been disposed of. Oats were not marketed early as a rule, and little pease was sold during October except in the case of lots specially contracted for by seedsmen. Judging by the remarks of correspondents, farmers are now feeding grain to their stock to a greater extent than in former years.

The harvest fields having been cleared early in the season, a longer time than usual was afforded for fall plowing, and many took advantage of the fine weather to plow a second time. Those who had good loamy soil were far advanced by the 25th of October, and some were even through with their plowing by that time. Those on clay land, however, were not so fortunate, as the prolonged drouth had dried the clay, and in some cases the ground became so hard that it was impossible to plow until the late fall rains came. Taken altogether, it is safe to say that operations were fully up to former seasons so far as progress was concerned, and in many instances ahead of the usual record, and that the large area plowed in the fall will give farmers a good start in their spring work. Considering that threshing was almost completed, the fact that so much plowing was done makes the fall of 1887 an unusual one so far as work on the farm is concerned.

FROM THE NOVEMBER REPORT.

A. Papineau, Rochester, Essex: Threshing is all over. Wheat, oats and barley are being rushed to market. Much has already been done in the way of fall plowing.

A. J. C. Shaw, Camden, Kent: Threshing is about half completed. Wheat is about half marketed and pease are mostly sold. Oats and corn are still on hand. Fair progress has been made in fall plowing, and the work is about half done.

J. T. Rogers, Dunwich, Elgin: Threshing is about all done. Wheat is about the only grain we have to get money out of, and it is mostly sold already. Barley and other grains will be fed. About one half of the plowing has been done; some had to quit it as the ground was too dry.

Wm. W. Wells, Woodhouse, Norfolk: This is where we all got fooled. Some expected 15 bushels per acre, some 20 bushels and some 25 bushels, but when they threshed! Oh, had you seen the lip! down, down, down! Only 12. The marketing is about all done. Small profits and quick returns. The ground is in excellent condition and great progress has been made in fall plowing.

Andrew Turnbull, Seneca, Haldimand: Threshing is pretty much all done, and about half the grain is marketed. Fall plowing is pretty forward, but the ground is rather dry.

Cranmer Riselay, Bertie, Welland: Threshing is all done and the grain is being marketed. The usual amount of fall plowing has been done.

W. S. Howell, Sombra, Lambton: As harvesting began early threshing began correspondingly early, and was rushed through as rapidly as possible, and nearly everything is threshed. Marketing is going on rather slowly owing to low prices and fall work that must be done. Railway facilities now permit the selling of grain to go more slowly, as men are not now obliged to ship by water, Our heavy clay lands are hard to plow from drouth, but fair progress has been made.

John Wright, Goderich, Huron: Threshing was done very early this season, and a good deal of wheat, barley and pease has been sold. Fall plowing is well advanced; that on stubble land is nearly all done, and farmers are now beginning on sod.

Hugh Murray, Bruce, Bruce: Threshing of fall wheat is about through, and in a good many cases the spring crops as well. With the exception of barley, very little grain has been marketed. Plowing for next spring's crop is in full operation, the weather and the condition of the ground being very favorable.

Malcolm Cameron, Glenelg, Grey: Threshing commenced here early in August, and finished about the 25th of October. Very little grain has been sold except fall wheat for seed. Marketing is chiefly done in the winter, A considerable amount of plowing has been done but not as much as usual, as on account of the drouth farmers were late in starting.

Walter Hartman, St. Vincent, Grey: Grain is nearly all threshed. Barley is now being marketed freely. Probably about half of the fall plowing is already done, it was delayed on account of the drouth.

Wm. Sutherland, Gwillimbury W., Simcoe: Not much grain has been threshed in this township, except barley, which is mostly marketed. There has been little wheat threshed except for seed and gristing. Farmers here do not thresh much wheat until the new year, as they find the straw is better saved.

Thos. F. Burrows, Sunnidale, Simcoe: Nearly all the wheat has been threshed, and a large quantity marketed. Barley has been threshed and nearly all marketed. The other grains except wheat are in the barns yet; very little fall plowing has been done. The ground has been so hard and dry that it was difficult to cultivate properly.

Wm. Wright, McGillivray, Middlesex: Threshing is mostly done. The wheat panned out small, and as a good many were needy I fear a good deal of it has been marketed. The bulk of the barley I think has been marketed. Some are about finished plowing for spring crops, whilst others are but little more than started.

James A. Glen, Westminster, Middlesex: The grain is generally threshed out but very little has been marketed. Coarse grains are not likely to go to market as they are required on the farm. Plowing is progressing favorably, and unless frost comes before the 15th of November, about all will be done.

James Anderson, Zorra E., Oxford: Threshing is all done, and wheat is about half marketed. Barley weighing 45 lbs. to the bushel has been nearly all sold; also a considerable quantity of oats. Never was more fall plowing done, and we are still at it. A large amount of land has been plowed twice.

D. McCormick, Dumfries, S., Brant: Threshing is nearly over, and wheat is nearly all marketed. Barley is about two-thirds marketed, but nearly all the other grains will be needed for home consumption. Plowing is far in advance to what it generally is at this season.

Wm. Courtice, Fullarton, Perth: Most of the grain has been threshed, and some of all kinds has been put on the market. Plowing for next spring's crop is well advanced. Plowmen are now turning down sod fields.

H. McDiarmid, Puslinch, Wellington: Threshing is about completed. Very little wheat has been marketed. Barley is nearly all sold, but not much of the other grains has been disposed of. On account of the harvest being finished so early, fall plowing is pretty well advanced.

George Risk, Wilmot, Waterloo: Nearly all have threshed here, but not much marketing has been done except of barley. Plowing is well forward, but I don't know of any who are finished.

William M. Kiernan, Mulmur, Dufferin: Wheat is nearly all threshed, but very little has been sold. Barley has been threshed and nearly all taken to market. Other grains are in the bins yet. Fall plowing is well up to the average of other years, although the drouth impeded it much.

W. H. Van Duzer, Grimsby N., Lincoln: Threshing is all done, except a little clover. I think some are holding their wheat back for a rise in price, but many will have to sell to meet payments. There is a good demand for barley, but not much in the county. Fall plowing is well under way, but a little late on account of the ground being very dry and hard.

Robert Inksetter, Beverley, Wentworth: I should think about three-fourths of the crop is threshed, but the threshing test will lower the August estimate, especially the spring grains. Perhaps one half of the wheat and barley is marketed. There is a good deal of plowing done, but some fields are hard to plow.

Adam Alexander, Nassagaweya, Halton: The threshing is nsarly all done, but little wheat is marketed yet as all are busy plowing. Those who grow barley have sold, but there is not much raised here. Very few of our farmers sell their oats or pease. Every one who would fall plow is nearly through; but it is a debatable question with some whether it pays to fall plow except for barley.

John Sinclair, Chinguacousy, Peel: Threshing is all done. The bulk of the barley has been marketed; but there is considerable wheat in the farmers' hands. Fall plowing is nearly completed, thank goodness, for it has been a terribly hard job, the dry weather having made the ground so hard.

J. Bartholomew, Whitchurch, York: Threshing is pretty nearly finished; there has not been much wheat marketed, but the bulk of the barley has been sold. Plowing may be considered backward. There is a great deal to do yet, for although harvesting was finished early the ground was too hard to plow.

Thomas Cain, Scott, Ontario: Wheat has been mostly threshed and held where practicable for a rise in price, (but many have little to sell). Barley is being rapidly marketed. Pease and oats are a short crop and there is not much to sell. Plowing is through with any kind of thrifty people, and a great deal has been plowed a second time.

Robert Hodge, Clarke, Durham: Steam threshers have been doing good work, and the grain is nearly all threshed. It was in a good dry state for threshing. Considering the want of rain and the hardness of the soil, plowing has been pushed rapidly forward.

C A. Mallory, Percy, Northumberland: The grain is nearly all threshed. Wheat has not been marketed to any great extent, but barley has nearly all been sold. Owing to drouth farmers were not able to do much plowing until late and are now improving the time, but the work is not as far advanced as at usual at this season.

W. R. Leavens, Hallowell, Prince Edward: Threshing is about done. Pease are about all marketed as per contract with seedsmen. Barley and other grains are yet unmarketed. Plowing was not as early as usual on account of the drouth drying the ground so hard, but late plowing is progressing favorably.

H. A. Baker, Camden E., Lennox and Addington: Threshing is nearly all done. Barley will be nearly all marketed by the second week of November. Plowing will be nearly all finished this month.

Alexander Ritchie, Storrington, Frontenac: Threshing is all done. There was nothing to market but a little barley and wheat, and it is all marketed. Farmers have learned to thresh earlier than usual, and now thresh as soon as harvest is over. Plowing is well advanced.

R. G. Murphy, Crosby S., Leed and Grenville: This township has been noted for producing a large amount of cheese, and so there is but little grain raised for market. Wheat is grown for local consumption and coarse grains for feeding the dairy stock. The usual amount of plowing has not been done, owing to the dryness of the soil.

A. Harkness, Matilda, Dundas: Very little threshing or marketing has been done yet. The sason has been so favorable for draining and clearing up low lands that most of the farmers are still engaged in that and their fall plowing; good progress has been made with plowing. Near all the land intended for spring sowing will be turned over this fall.

G. I. Morgan, Osnabruck, Stormont: But little threshing is done here until winter sets in. No wheat is raised for sale. Barley and almost all the other grains are chiefly fed to stock as this is almost entirely a dairy country. There has not been much plowing done as the ground was too dry to work.

James Cattanach, Lancaster, Glengarry: Considerable threshing has been done, but very little grain of any kind has been marketed yet. Fall work is proceeding satisfactorily. So far the weather has been favorable, but the land has been rather dry for plowing.

Robert Thistlethwaite, Hawkesbury W., Prescott: With the exception of pease there has been little or no threshing done as yet. All grains are low. In fact there is not much grain sold in this township, as dairying is the principle industry, and nearly all the grain is used for food. Clay lands have been too dry for plowing. Some progress has been made in this respect, but not as much as in previous years.

J. C. Edwards, Clarence, Russell: Some threshing has been done, but not much marketing. On light soils considerable plowing has been done, but not much on heavy land on account of it being so dry and hard.

Lewis Morton, Goulbourn, Carleton: A good deal of threshing has been done, but there is some yet to do. Very little grain has been yet marketed, except oats, which bring from 30 to 34 cents per bushel at 34 lbs. Not much plowing has been done yet; the ground has been too dry and hard, as very little rain has yet fallen.

Wm. Hawkins, jr., Stafford, Renfrew: Most of the threshing is done, but little or none has been marketed. The marketing is generally done in the winter months. A good deal of fall plowing has been done, I think more than usual, as the clay land gives a better crop when plowed dry.

Lawrence Dowdall, Drummond, Lanark: There has been a good deal of threshing done in this township, and nearly all the grains have turned out better than was anticipated. Plowing is going on rapidly; all are still busy at it.

John A. Jackson, Eldon, Victoria: Barley is about wholly threshed and marketed. Wheat and oats are nearly all threshed, but not much has been sold. Fair progress has been made in fall plowing.

John Moloney, Douro, Peterborough : Threshing is about half done. Barley has been half marketed, but very little other grain sold yet. There will not be much to market, as it will nearly all be needed for home use. Fall plowing is very backward ; the ground being so dry and hard farmers were waiting for rains which did not come.

George A. Bartlett, Monteagle, Hastings : Threshing is about all done, but no marketing so far. The greater part of the grain raised here is used in the lumbering business and is not delivered till winter. Operations in fall plowing are about up to the average.

Donald Grant, Monck, Muskoka : Threshing is about completed in this section, but very little marketing has been done yet. Some farmers are at plowing, but the ground has been too dry to plow to any advantage.

Peter McDonald, Machar, Parry Sound : The threshing is nearly completed. Very little wheat is raised to sell, the farmers considering themselves very well off if they have enough for their own bread. Very little barley is sold, as it is nearly all fed to stock. The only grain raised here for sale to any extent is oats.

UNDER-DRAINAGE.

Owing partly to the extreme drouth which on some soils rendered the work difficult and expensive, and partly, as a good many farmers aver, to the hard times and the scarcity of money, the percentage of increase in the area under-drained during the past season was not, perhaps, quite so large as in some previous years. Despite these drawbacks, however, a decided advance was evidently made in this important adjunct to the ordinary operations of the farm ; and even where, on account of hindrances of one kind or other, draining has not been extensively carried on there are unmistakable indications that the best farmers are fully alive to its importance. In fact it may safely be said that nothing which comes within the purview of the Bureau is more clearly indicative of the rapid advance which is being made in the science and art of agriculture in this province than the manner in which—judging from the successive reports of correspondents—intelligent ideas on the subject of drainage have permeated the great mass of the farming community. The necessity of under-drainage over a large portion of the province and its productiveness as an investment can hardly ever now be treated as an open question. Probably not a single farmer in Ontario of any understandig would venture to refuse his assent to the following paragraph, which is extracted from the first report issued by this Bureau :

At this time of day no argument is required to convince the farmers of Ontario that if they wish to be able to sow early and reap early, if they wish to render the soil of their farms more easily worked, if they wish to improve the yield and quality of their grain and lessen the chances of injury by spring frosts and rain, if, in short, they wish to place the result of their labors as far as possible beyond peradventure, and ensure a good crop as far as such a thing can be assured, they must make the drainage of their farms an object of the first importance. It is a question whether lands of all sorts may not be improved by draining ; but, at any rate there is no doubt whatever that the only way to render a wet, low-lying or swampy piece of ground of any practical value to its owner, or to increase the productiveness of those lands which have a stiff, dense, water-retaining subsoil is to rid them of their superfluous moisture.

In the earlier years of the Bureau's existence a very common complaint among farmers when accounting for the small acreage under-drained was the difficulty of obtaining tile and the high prices which were charged for it. In many cases, even when the ordinary cost was not excessive, it had to be drawn such long distances that the cost of cartage became a charge so serious as to deter many from using tile who would otherwise have tile-drained their land. This drawback is one which has, fortunately, almost entirely disappeared.

FROM THE NOVEMBER REPORT.

Horatio N. Scratch, Gosfield, Essex : We are waking up to the importance of under-draining ; quite a large amount of tile drain has been put in this season. The supply of tile and of labor was sufficient. Tile draining machines are not used here.

James H. Brown, Colchester S., Essex : Considerable progress has been made in under-draining, not only on farms but along public roads. The supply of tile so far is sufficient for the demand, but not the supply of skilled labor. Tile-draining machines not much in use ; most of the work is done in the old way.

Thos. H. Coatsworth, Harwich, Kent : There has been a lot of under-draining done in this locality. The supply of tile was inadequate, and so was the supply of skilled labor. No tile-draining machines.

Thos. F. Routledge, Orford, Kent: There is more draining done every year. There was a good supply of tile and of skilled labor. No draining machines in this locality.

Sheldon Ward, Malahide, Elgin: Farmers are alive to the benefits of tile draining, and are making good use of the advantages of the Ontario Tile Drainage Act. Not so much was done this season as the ground was so dry. Plenty of tile and good quality. Skilled labor hardly equal to the demand. Ditching machines for tile are not in use.

John Haggan, Malahide, Elgin: Tile draining is attracting more attention than formerly. This township has now a good tile yard, and there is a good demand for tile. There is a machine for draining made at Springfield that promises to meet the general want.

H. J. Barber, Townsend, Norfolk: Tile draining is done as fast as the farmers think they can pay for it. Tile draining machines not in use: they have been tried by a few but have been laid aside.

O. E. Twiss, Middleton, Norfolk: Several farmers are under-draining this year as they are beginning to find out that in about three years time they are amply rewarded for their labor. Tile is used about altogether; the supply was equal to the demand. No tile draining machines are used in this locality.

James Lovell, Brooke, Lambton: Every year finds increased attention given to under-draining. On my farm of 100 acres, in three years, I have put in 26,000 drain tiles and feel quite certain that it is the best investment I ever made. We have now an abundant supply of the best of tile. Machines not much used; the greater part of the work done by hand.

Charles Gale, Sombra, Lambton: I know of no draining here; folks that drive cattle 4½ miles do not want drains; they want water. Plenty of farmers haul water five miles for family use.

George Baird, sr., Stanley, Huron: There has been fair progress in draining. No tile manufacturer in this township; lumber chiefly used. Supply of skilled labor sufficient. Draining machines in use but not extensively.

Robt. Currie, Wawanosh E., Huron: There has been good progress made in draining this year. The tile is plentiful and so is skilled labor. No tile draining machines here; too many stones in the sub-soil.

James Mitchell, Howick, Huron: This township requires a vast amount of under-draining, and farmers proceed slowly, using lumber more than tile. Draining machines are not in use.

John Herriott, Elderslie, Bruce: Not much under-draining done owing to the scarcity of tile and skilled labor. There is one draining machine but it can work only in certain localities, owing to the stoney bottom of the land.

Lewis Lamb, Greenock, Bruce: Not much progress in under-draining. I think the supply of tile is adequate. Farmers are doing little in the way of improvement owing to the low prices of produce. No tile draining machines.

James Brodie, Artemesia, Grey: Very little under-draining has ever been done in this township and that with stones or logs. No tiles are made in these parts.

Geo. B. Bristow, Osprey, Grey: Considerable progress in under-draining. Plenty of tile. One of Rennie's ditching machines is in use.

James Shearer, Egremont, Grey: Very little draining done and stones are mostly used. No draining machines in use here.

John Booth, Normanby, Grey: There was as much draining done as the farmers could afford—all stone. We can sometimes get a man to dig a drain by showing him how to do it, or he might dig an open ditch, but men who can build a drain properly are not to be had. I build all my own drains and cut them too when I can.

John Lennox, Innisfil, Simcoe: Good farmers have their lands pretty much drained; slip-shod farmers are standing still, and will probably remain so till doomsday.

Samuel Frazer, Tay, Simcoe: Under-draining is the exception. Tile is not used probably because there is not a tile draining machine in this section of Ontario. Farmers who drain use either stone or wood.

Richard Gibson, Delaware, Middlesex: A much larger quantity of tile has been "put in" in this locality than any season I remember. Supply of tile quite sufficient, and so, I think, was the supply of skilled labor. No tile draining machines used.

W. D. Stanley, Biddulph, Middlesex: Very little draining this year; the ground has been too hard for digging. The supply of tile has been adequate: they are now more plentiful. Skilled labor sufficient; no draining machines.

William Jamieson, Westminster, Middlesex: Not a great need for drainage has been felt as water has been scarce. The supply of tile is over the local demand, a good many being shipped to distant points. The supply of skilled labor was up to the demand.

James G. Pettit, Oxford E., Oxford: About the usual amount of under-draining has been done with an adequate supply of tile and skilled labor. No tile draining machines used here.

F. Malcolm, Blandford, Oxford: Farmers are more than ever learning the value of under draining. This being an excellent season for the work, thousands of rods have been laid and still the work goes on, and will only be stopped by winter. Plenty of tile. The man who can put in a drain on scientific principles is hard to get. Most of the work is well done here.

Robert Leake, Oxford E., Oxford: I think there is not as much drainage as usual, owing mostly to the scarcity of money.

D. McCormick, Dumfries S., Brant: There has been no drainage done this year in this section; too hard times.

R. Francis, Fullarton, Perth: Considerable draining has been done this year. We have plenty tile —three tile yards within eight miles. No draining machines used; too expensive and cumbersome. Plenty of labor.

Thomas Moffatt, Logan, Perth: Very little done in under-draining, a large quantity of open ditches going forward. No tile; all lumber used in this immediate section. Supply of labor equal to the demand. No draining machines.

Thomas Page, Wallace, Perth: A certain amount of draining and ditching is constantly going on, but what I call thorough draining is not practiced. There is any amount of tile that farmers want. There is a want of skilled tile drainers. Rennie's tile draining machine is in the township but I do not think it is very generally employed.

W. H. Stubbs, Peel, Wellington: There was considerable under-draining done in the early part of summer, but not since, as the ground was so hard as to make it very expensive. The supply of skilled labor would have been very scarce if the season had been suitable for digging. Draining machines are not much used in this township.

Robert Cromar, Pilkington, Wellington: Under-draining is becoming quite common now and with good results. We have plenty of tile—four kilns within a circuit of four miles. No draining machines here as yet: the common idea is that they would not work on account of small stone in the soil.

W. C. Smith, Wilmot, Waterloo; There has been more under-draining done this season than ever before. Practical men are plenty, and plenty of tile at present, though there was a scarcity in the spring. There are no draining machines.

Peter Winger, Woolwich, Waterloo: Considerable progress in under-draining. No tile draining machines in use. Plenty of labor.

James Reith, Luther E., Dufferin; Some draining has been done, but we have no supply of tiles—all wood and stone. There are several draining machines in this locality.

Isaac A. Merritt, Grimsby S., Lincoln: Nothing has been done in the under-draining line this year to my knowledge. I know of one ditching machine in the township though it has not been worked this year, I think.

Robert Inksetter, Beverley, Wentworth: Farmers are beginning to pay more attention to draining, but not enough yet. Plenty of tile by hauling them about ten miles.

F. J. Sleightholm, Toronto Gore, Peel: Scarcely any under-draining. This industry is at a low ebb with our farmers—sadly too low as the stagnant waters in our fields too truly testify. Supply of tile and skilled labor adequate. One draining machine only (Rennie's).

Alex. McLaren, Caledon, Peel: Not much draining done and never will be till we have money at lower rates of interest. The Government should lend money for draining at three per cent. No tile draining machines could be used, too many stones in the way.

Wm. Kersey, Toronto Gore, Peel: The very low prices of grain have rather checked the progress of under-draining. Farmers have had to curtail expenses and necessary improvements will have to lie quiet for some time. There is a good supply of both tile and skilled labor. There are two of Rennie's ditchers in use.

J. Bartholomew, Whitchurch, York: Some draining has been done but not as much as in some previous years on account of the very dry summer; the ground is very hard. I only know of one tile draining machine in the township; myself and two neighbours own it.

Ralph Forsyth, Pickering, Ontario: Very little under-draining; not half enough. Tile can be had in sufficient quantities. There are a few professional diggers, but no machines.

H. A. Walker, Hope, Durham: Very few drains made this year; times too hard. Plenty of tile but too dear. Plenty of drainers; they want high wages. No draining machines. From actual experience here, early saved crops are the most profitable, and to facilitate that object every farmer should see his plowing all done up nicely, and if any drains need repair, or if new drains are required, he should get them done if it lies in his power.

Luther Platt, Athol, Prince Edward: Very little tile used in this township. The greater portion of the soil is too shallow and gravelly. No tile draining machines in use.

George Marlin, Sheffield, Lennox and Addington: Very little progress has been made in draining this year. We don't use much tile here; drains are generally made with stone. No draining machines in use.

C. R. Allison, Fredericksburg S., Lennox and Addington: There is not as a general thing a very great amount of tile put in. There has been a large amount of money expended in opening up the main outlets and that is proving a great benefit. There are a few draining machines in use.

A. Knight, Kingston, Frontenac: There has been a large amount of tile draining done. Supply of tile adequate as we have a tile factory in our section. Skilled labor scarce; it is very hard to get men that understand the work. Tile sells at from $8 to $30 a thousand.

Geo. Sanderson, Oxford, Leeds and Grenville: No under-draining done, but a great deal of open draining. We have had a very dry autumn and farmers have done a great deal of draining such as opening creeks and run ways of water.

James Collison, Matilda, Dundas: Our land is so level that we have open drains. A good deal of that kind of draining has been done—more than any previous year in my recollection.

H. F. McDermid, Cornwall, Stormont: Not much under-draining done this year. Very little tile is used—mostly stones or hemlock lumber. No tile draining machines in this neighborhood.

John Taylor, Osnabruck, Stormont: A great deal of draining done as it was dry; many wet places were drained.

James Cattanach, Lancaster. Glengarry: Not much under-draining, but a great many surface drains have been cleaned out.

Robert Thistlethwaite, Hawkesbury W., Prescott: It has been a good year for drainage and considerable has been done. A tile manufactorv has been established in this township. Heretofore we have used stones and wooden pipes. There has been a sufficient supply of skilled laborers. No tile draining machines here.

Alfred Hill, Cumberland, Russell: No under-draining here; they generally use open drains.

P. Madden, Nepean, Carleton: Very few tile drains, but a lot of open ditches or outlets. We have the ditcher. Skilled labor is scarce. We never could get tile till this year.

James F. Grierson, Torbolton, Carleton: There has been a large amonnt of draining owing to farmers not being able to plow on account of the drouth.

Wm. Doyle, Osgoode, Carleton: Very little under-draining is done in this part. There are no tiles or tile draining machines; what is done is chiefly with hemlock planks. Stones were used a few years ago, but did not prove serviceable, the clay working through and closing the drains.

Wm. Paterson, Ramsay, Lanark: More has been done in drainage this year than usual. Tiles are to be had in plenty, but men to dig are scarce. No draining machines are used.

Robert Oswald, Somerville, Victoria: There has been a good deal of open draining of swamps done this fall, but no under-draining.

James Dermott, Carden and Dalton, Victoria: No draining done owing to dry weather. Draining machines not in use here; most of the land is more or less stoney.

John Moloney, Douro, Peterborough: Under-draining has been done to a limited extent by the farmers this year. The supply of tile is adequate, but the supply of skilled labor short of requirements. No tile draining machines used in this locality.

A. R. Kidd, Dummer, Peterborough: Not much progress is made in under-draining—something that I think should receive greater attention. It would certainly greatly neutralize the effect of the drouth. Supply of tile adequate, but not the supply of skilled labor. No tile draining machines.

Chas. R. Stewart, Dysart, Haliburton: No under-draining; none wanted; nature very kindly does all the business.

Edward Bray, jr., Stephenson and Stisted: There is no necessity of draining in this neighborhood: the ground is mostly sandy or gravelly loam.

GENERAL REMARKS.

The following extracts are made from the general remarks of correspondents:

FROM THE MAY REPORT.

C. W. Hind, Mersea, Essex: Farmers depend more on corn for fattening pork than on grain to sell. Many farmers on 100 acres will fatten from 50 to 100 hogs, and plant from 10 to 20 acres of corn. Many are turning their attention to dairying, and are patronizing the cheese factory. In my opinion this western country is much better adapted to dairying than grain growing.

Wm. T. Shaw, Chatham, Kent: Farmers are beginning to get their eyes opened, and to see that wheat, at its present price and average, is certain loss. They are determining henceforth to abandon the idea that wheat is the only thing there is money in, and are going in for potatoes, beans and garden produce. Potatoes are in general a success here.

Francis Giffard, Camden, Kent: We have had a very cold, dry spring so far, although the ground is in fine condition for working. I do not ever remember seeing crops go in so well, but as yet we have had no weather to start them. I think the weather is all in favor of fruit in this county.

A. J. C. Shaw, Camden, Kent: There is, with the opening of spring, the usual turn-out of hogs, cattle and colts on the public roads to forage and steal, and to destroy the roadsides, shade trees, etc. Many of them belong to farmers who should have more respect for their stock, if not for their neighbors, than to do so. In many instances where ditches are rooted in by the hogs it will cost to clean out from $25 to $50 in each statute labor division. I would recommend that an Act be passed compelling township councils to appoint road inspectors or caretakers, and compel them to impound all animals on the highways.

James Davidson, Yarmouth, Elgin: I never saw trees burst out into leaf so rapidly as they have done since the 6th to the 10th. The apple seems destined to be one of the staple crops of the farmers of this part of Ontario.

John H. Houser, Canboro', Haldimand: We have had a favorable season for doing spring work; the land was in good condition for putting in the seed. Wheat looks the best on our clay land that I have seen for some years. Considerable interest has been taken in breeding horses of the heavy draught and roadster type; a large number of foals this spring and no losses.

Joseph Martindale, Oneida, Haldimand: Every farmer in this neighborhood has an emigrant boy, and some two. They are making good farm servants, willing to do anything and very anxious to learn. I have had one four years, and he is an excellent boy. Farmers who have those boys in their employ should use them well, and they would do well for them.

Peter Metler, Pelham, Welland: A great many hire by the day, and most practice mixed farming, and consequently there is a great variety of work that suits all kinds of hands.

J. B. Hobbs, Warwick, Lambton: Emigrants may as well starve in the old country as this, as it is against our interests to have any more, especially older than twenty-five. They are harder to teach older than that, and we will have to build poor-houses before long or give them money to take them back. We are cutting the wages of good men to suit the prices of our grain.

Frank Morley, Usborne, Huron: I think that farmers in this section lose a great deal for want of some organization such as a farmers' club or institute, where they could meet to exchange ideas and take united action for the sale of produce, or purchase of implements, etc. Could not the Bureau do the farmers good service by publishing in their report some information for the establishing of such clubs, and constitution and by-laws by which they could be governed?

James Gaunt, Kinloss, Bruce: Domestic servants are scarce and not to be got at any wage to work in farm houses. I think it would be a good plan for the Government to aid the emigration of girls of proper age, etc., from England and Scotland, where I presume they have more than they require, and they would be better in condition by coming to this country.

James Latter, Collingwood, Grey: Our winter has been unusually rough and stormy. I have lived 29 years on this mountain, and have never seen so many east storms during a winter; neither have I seen so rough a one.

Samuel C. Tuttle, Oxford E., Oxford: Although most farmers have not realized much of a profit from the last two or three years, there seems to be a feeling of safety and contentment. Good farms are held at high prices, considering the price of farm produce.

John Campbell, Blanshard, Perth: This spring shows more plainly than ever the necessity of thorough drainage, even on high, rolling land. There is scarcely a field of fall wheat in the vicinity but gives sure signs where a drain is wanted.

W. C. Smith, Wilmot, Waterloo: There is a general grumble about hard times. Men wanting farms can hardly pay rent and taxes, and those who have farms mortgaged cannot pay their interest, thus throwing many farms on the market for sale.

Jonathan Varcoe, Amaranth, Dufferin: We have had a remarkably fine time for seeding. This township is a great deal better for the Government drain put through it. The land dries earlier in spring, and rains soon run off.

Robert Inksetter, Beverley, Wentworth: The most general remarks that we hear now-a-days are about the hard times. Unless we get some change soon in the shape of free trade, or something of that sort, hundreds of farms will be brought under the bailiff's hammer. There have been a great many such cases during the past year.

John Husband, Trafalgar, Halton: It is my opinion that parties who do not know anything about farm work should not be encouraged to come here, unless they are willing to learn and have capital. The country is flooded with many incompetents, and I do not think this country should be made a dumping ground for such.

James Robinson, Markham, York: Farmers are very careful about hiring, preferring to do all they can personally, as wheat and other produce is very low. A large number are getting binders and other labor-saving machinery.

R. Forsyth, Pickering, Ontario: I think that farmers as a class should organize. We need a farmers' union, with a local branch in each school section. I approve of farmers' institutes. We need butter factories or creameries, and we also need a reduction of our taxes. Prices of produce go down, but our councils, both township and county, cost more every year. We take too many men to do our municipal business, and a reform is needed. Things are bound to have a level, or something will go to the wall.

Abraham Morris, Cartwright, Durham: The farmers generally are hard up for money, as they sold the grain at so low a price. Many are discouraged and are giving up.

James Parr, Cartwright, Durham: On the whole the country looks about as well as is usual at this season. Farmers feel hopeful, and are building upon and improving their farms quite as much as when prices for produce were better, thus giving mechanics and others plenty of employment.

W. R. Gordanier, Ernesttown, Lennox and Addington: The farmers are about discouraged on account of the low price of grain; the only thing that seems high are taxes. What we need is free trade with our neighbors.

W. C. Plotz, Clarendon and Miller, Frontenac: This part of the country would do well for dairying, but most of the settlers have been lumbering in their young days, and when rheumatism or consumption has well taken hold of them, they take up 200 acres of land. In fact they have no taste for farming; it is a home for them. They still go lumbering and drive on the rivers, whereas it requires all the settlers' time, winter and summer, to improve a bush farm. If some European settlers could come here with a small capital, and have an interest in farming, they would be far ahead of the Canadian settlers, and we have plenty of room for good emigrants. We are within half a day's journey of the K. & P. Railway, and the land is free grant.

Ambrose Derbyshire, Bastard, Leeds and Grenville: Plum Hollow and vicinity is a dairy section, and farmers have given their whole attention to this branch of husbandry. From this, and this alone, they get the most of their "ready go down." Hence they don't give as much attention to raising grain as they otherwise would.

W. A. Webster, Leeds and Lansdowne Front, Leeds and Grenville: Everything is going along nicely. Prices are low, but the price of a bushel of wheat will buy more of the necessaries of life than at any former period of our history, and we can borrow money, if we require it, at a very low rate of interest, which is a great benefit to farmers.

Alex. Farlinger, Williamsburg, Dundas : I think the rate of interest should be limited to six per cent. Farmers are borrowing more than for three years past. General improvements are constantly going on ; the Drainage Act works well.

Hugh McDiarmid, Roxborough, Stormont : It is the opinion of the leading members of our agricultural societies that specimens of the most desirable kinds of grain should be sent to the different agricultural societies in the province from the Model Farm, as it would be the means of checking impositions by bogus firms.

P. E. Bucke, Ottawa, Carleton : The Experimental Farm has imported a lot of new Russian wheat, grown in that country, 300 miles north of Ottawa. It is expected to ripen three weeks earlier than the usual spring varieties. Samples have been distributed in the North-West, and ten acres are being sown on the Experimental Farm here. This wheat is a very fine sample.

Ralph Lett, Wilberforce, Renfrew : Times tightening ; money very scarce ; farm produce low ; manufactured articles high.

Lawrence Dowdall, Drummond, Lanark : I think that farmers have no reason to complain of the prospect of the county at the present time ; if they have lost in one thing they have gained in others.

Wm. Ramsey, Mariposa, Victoria : If the Government should grant a small amount of money to the farmers to help them to cut some leading drains to drain some of our swamps, it would be about as much benefit to the county as giving to the railways and then letting the companies charge what they like for carrying our produce to market. There is a good deal of land around here that would come into use if we only had an outlet for the water.

A. Wiancko, Morrison, Muskoka : There is not a good bull nor stallion in the township. I wish the Government would find a way in assisting the back townships in these matters.

John H. Osborne, Stephenson, Muskoka : This season has been very cold, but the prospects are far more than an average crop this year. If farmers would give up sowing spring wheat and sow oats and pease, and go in for stock-raising (this district is admirably adapted to this sort of farming), they would be more successful.

FROM THE AUGUST REPORT.

J. G. Stewart, Raleigh, Kent : The general use of self-binders has an effect on the labor market, and male farm help is more plentiful. There is a great demand for female domestic labor which cannot be had at all. The stave factory here employs a great amount of labor, but the elm is fast disappearing, faster indeed than clearing and cultivation follows.

James Davidson, Yarmouth, Elgin : Farmers will have to economize, as feed as well as money will be scarce. Nearly all the clover sown this spring is a total loss, which means from $12 to $14 per 100 acre farm, besides the future loss.

W. W. Wells, Woodhouse, Norfolk : This has been the earliest harvest known to Canadian farmers, and the result is a positive proof that early seeding and finely pulverized soils are the farmers' only safeguard against the worst effects of these climatic changes.

J. McClive, Bertie, Welland : The number of horned cattle is very large, and from the present outlook feed will be scarce next winter. A great amount of good oat straw is wasted by letting the oats get yellow ripe, at which stage the straw is good for nothing for feed. Had the same been cut, say four or five days sooner, the oats would be nearly as heavy and the feed two-thirds as good as fair timothy hay. I cut all my grain crop as soon as the milky substance in the grain will not squeeze out, and I find no shrinkage in weight of grain, no shelling in the field, it cuts very easy for the reaper, and the straw is 50 per cent. better for any purpose, even for bedding.

G. Edwin Cresswell, Tuckersmith, Huron : The season of 1887 is the earliest on record in this township. Numbers of farmers had all their fall wheat, oats, pease, spring wheat, etc , in the barn in July This county was formerly famous for its spring wheat. Would it not be worth while for the Ontario Government to institute an enquiry into the subject of the failure of spring wheat, as it most certainly does not arise from poverty of soil? Microscopic investigation is needed. Farmers, unfortunately, have neither the instruments nor the time ; scientific men are needed for such a purpose.

John Glaspell, Tiny, Simcoe : The English sparrows are very numerous and destructive. The Government ought to give a bounty for their destruction.

Wm. Black, Westminster, Middlesex : The self-binders have now supplanted the reaper, as the reaper. in years gone by supplanted the cradle ; and the use of labor-saving implements has reduced manual labor to a minimum.

Edward Irvine, Grimsby S., Lincoln : Last spring was backward owing to wet weather ; the summer has been remarkably dry, so that farmers who had little or no fall plowing done have poor crops. On fall plowing the crops were fair. Fall plowing for spring sowing !

W. C. Ingelhart, Trafalgar, Halton : I have been farming for over half a century, and have never known so severe a drouth in this section. Hay and coarse grains are likely to be scarce and dear.

Wm. Kyle, Matilda, Dundas : There are more wells dry, and larger forest fires, than in any year since 1854 ; yet, in South Finch, only six miles from here, they have had too much rain.

A. R. Kidd, Dummer, Peterboro' : The outlook for the farmer is certainly gloomy ; short crops and miserable prices. The dairy only promises anything like remuneration for capital invested.

Charles R. Stewart, Dysart, Haliburton : We want somebody to come here with a pocket full of money to buy our hay, press it and export it. We have more than we can possibly use. I could mention farmers who have from 30 to 70 tons of hay to sell. Send us a Yankee buyer, and your Bureau will receive the blessing of this great people.

FROM THE NOVEMBER REPORT.

A. M. Wigle & Son, Gosfield, Essex: We are thankful for your reports. They give us an idea of how to average our crops for the coming year, so as not to run into excess.

James McFarlane, Dover, Kent: One farmer has told me that he saved his corn from the ravages of the wire worm by applying coal oil to the seed before planting. Do you know of any way of checking the injury by wire worm?

Dugald Campbell, Dunwich, Elgin: The past season should certainly teach the farmers one lesson, and that is, no matter how promising his pastures are in spring, about the 15th of June he should prepare a nice, rich, mel ow piece of ground, say from a quarter of an acre or upwards (in proportion to his stock), harrow this down smoothly, drill in western corn at the rate of four bushels per acre, or what is equally good, to sow it or gang plow it in. He will then be fully prepared for any drouth that may occur, and his stock will come through all right and in good condition. I always practice this successfully.

Joseph Martindale, Oneida, Haldimand: The improvements made in agricultural machinery are a great benefit to the farmer. The self-binders and horse hay forks are doing wonders. A 200 acre farm can now be worked by two men and one boy, whereas a few years ago it took six men and the labor was very much harder. The work upon the farm now cannot be called hard unless one wants to work eighteen or twenty hours per day.

Robert Currie, Wawanosh E., Huron: Our wheat crop has been almost a failure this season, coarse grains are cheap, and cattle are still going down in price. The outlook for the farmer is bad, with the English sparrow increasing so fast that they take all that is exposed in the sheaf in the barns. They have become a nuisance, but what is to be done to reduce them?

James Weatherhead, Lindsay, Bruce: It was one of the dryest years I ever saw, and to make matters worse about 9,000 acres of bush was burnt this year in the township, and some farmers have not a green tree left on one hundred acres.

A. Stephen, Sullivan, Grey: One noticeable feature of the year was the alarming increase of the potato bug. Our legislature would confer a favor upon the farmers of Ontario if they passed an Act to compel municipalities to use stringent measures to keep the pests within bounds.

Daniel Marshall, Keppel, Grey: This is an age of progression. I think something more should be done with the sides of the road. Farmers haul stones out on the sides of the road and render it impassible, besides giving a very untidy appearance to the road.

James A. Glen, Westminster, Middlesex: I feel sorry to pencil such a report, but the terrible drouth has left us in such a case that it is true. There is more land for sale here than has been offered since the close of the Russian war. I never saw such tough times for farmers during the past thirty years.

F. Malcolm, Blandford, Oxford: Agriculture it seems to me is leading more into specialties as the country gets older, and this is because farmers find it pays to give special attention to one or two branches Localities are finding this out too. Milk is the great specialty in this section, and the more it becomes so the better it will pay. Other localities adapted for something else will find it pay to make a specialty.

D. McCormick, Dumfries S., Brant; I would like room for just one remark here, and that is that what I consider to be the greatest pest farmers will have to contend with in the future, if some remedy is not provided through some such medium as yours, is the English sparrow.

Thomas Page, Wallace, Perth: A neighbor of mine cured (to my satisfaction) several cases of black knot on his trees by touching the affected part with tincture of iodine. There was no necessity to cut off the limb; it certainly was a cure on a small scale.

H. McDiarmid, Puslinch, Wellington: The severe drouth of the season has proved disastrous to newly planted trees, bushes, etc., as well as to the general crops. Many trees which were planted last year survived that season, but succumbed to the very severe drouth of this year.

A. Forster, Markham, York: This has been the finest year for doing the outside work of the farm, such as stoning, fencing, cleaning up new land, etc., than there has been for many years. The harvest was over very early, and there was very little time lost through rain or storm.

W. R. Leavens, Hallowell, Prince Edward: Tomatoes and pumpkins are extensively grown for canning purposes. The four canning factories in our vicinity make a ready market for a great deal of produce, and they employ a great many hands both male and female.

Thomas Andrew, Kenebec, Frontenac: This has been the driest season ever known. Springs dried up that were never known to fail before. The lakes are some feet lower than ever known.

J. L. Haycock, Kingston, Frontenac: The farmers of this section will be as near the bottom of their pockets before next harvest as they have been for years. High taxation, low prices and poor crops are rapidly transforming the "bone and sinew" of this country to the "skin and bone" thereof.

James F. Grierson, Torbolton, Carleton: This season has been very remarkable for drouth. The oldest inhabitant does not remember anything to equal it. The ground during the summer was cracked two inches wide in places, on some clay soils, and the drouth has had a great effect in lessing the weight of our grain and root crops. We have also had great bush fires and the destruction to farm property in houses, barns, stacks and fences has been great.

Wm. Doyle, Osgoode, Carleton: Would it not be well for correspondents to state the different kinds of grain raised in their locality, and what kinds gave the best results?

Thomas Tellford, Ennismore, Peterborough: What are we going to do for spring wheat seed in 1888? Colorado yields light, White Russian is completely run out. Could the Bureau not devise some plan whereby farmers could purchase seed they could depend upon? This, I think, should be one of the objects of the working of the Bureau.

Alex. Southworth, Cardiff, Haliburton: This has been a bad fall for bush fires. Large tracts of forest have been destroyed, and many fences and stacks of hay and in some cases farm buildings have been burned.

STATISTICS OF

THE WEATHER AND THE CROPS.

THE WEATHER.

TABLE No. I.—Showing for each month the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario in 1887; also the annual mean for each station.

	Temperature.	Windsor.	Goderich.	Simcoe.	Stratford.	Hamilton.	Toronto.	Barrie.	Peterboro'.	Cornwall.	Pembroke.
		°	°	°	°	°	°	°	°	°	°
January.	Highest	56.0	47.0	50.0	46.0	50.8	44.1	45.5	43.8	40.5	42.6
	Lowest	—10.0	—4.5	—17.0	—16.2	—6.0	—16.6	—22.9	—30.6	—29.7	—38.3
	Mean highest	29.7	25.2	28.6	24.6	31.0	26.7	23.1	23.5	19.5	21.7
	Mean lowest	10.4	10.6	8.0	3.7	8.5	8.4	0.5	—0.5	—3.6	—8.0
	Monthly mean	20.4	19.1	20.3	16.5	22.0	18.1	12.8	13.1	8.5	4.4
February.	Highest	52.2	44.4	50.0	48.4	52.8	45.1	45.6	46.8	45.9	46.6
	Lowest	—0.1	—9.8	4.0	—10.2	1.6	—8.4	—14.8	—12.3	—14.6	—17.2
	Mean highest	34.8	28.2	32.7	27.8	34.6	29.6	26.7	26.6	24.0	23.0
	Mean lowest	17.9	13.1	16.9	9.4	13.0	13.2	4.0	2.8	2.9	0.9
	Monthly mean	27.5	21.0	25.9	19.6	25.2	21.7	17.2	17.8	14.2	11.6
March.	Highest	54.1	43.4	49.5	44.6	56.8	44.9	42.4	44.8	40.0	42.6
	Lowest	5.9	3.0	8.0	1.6	4.7	4.0	—9.6	—9.3	—9.5	—21.3
	Mean highest	39.7	30.0	35.1	30.0	36.7	31.9	28.9	30.6	28.4	28.6
	Mean lowest	19.6	15.6	8.0	14.2	22.5	17.6	8.5	11.3	10.1	6.4
	Monthly mean	29.1	23.5	27.2	22.4	28.8	24.8	19.3	21.4	21.0	17.2
April.	Highest	78.8	69.2	69.0	72.2	76.2	71.1	69.8	69.7	61.4	68.6
	Lowest	7.8	12.0	17.0	9.5	16.5	20.0	2.8	9.9	—1.0	—2.2
	Mean highest	57.8	49.3	51.1	49.2	.....	48.4	48.3	48.9	45.0	47.0
	Mean lowest	30.6	30.3	30.0	29.0	.....	30.5	27.5	24.1	26.3	25.6
	Monthly mean	44.5	39.6	42.4	39.1	42.8	39.4	38.0	39.0	37.2	35.5
May.	Highest	93.3	88.0	80.0	89.7	89.5	78.3	84.6	90.6	87.3	92.0
	Lowest	42.6	41.8	41.0	41.8	30.1	39.2	38.0	36.0	34.0	34.0
	Mean highest	75.5	70.9	70.5	74.7	70.6	68.8	70.8	75.4	74.5	76.4
	Mean lowest	49.2	50.8	49.4	49.4	39.9	47.8	47.7	.....	49.7	48.9
	Monthly mean	63.8	60.9	62.3	62.2	60.0	58.5	61.0	63.3	62.7	62.1
June.	Highest	91.7	88.8	83.0	89.4	92.5	89.5	92.6	90.6	89.8	93.7
	Lowest	47.6	46.7	45.0	42.0	36.9	47.4	46.0	45.0	42.9	45.8
	Mean highest	79.0	73.9	73.8	76.0	75.6	72.9	75.7	80.4	77.6	79.0
	Mean lowest	56.1	56.2	54.4	54.3	46.5	54.0	53.8	54.8	55.6	55.3
	Monthly mean	69.3	64.7	66.1	65.8	66.0	63.9	62.8	68.8	66.9	67.1
July.	Highest	98.6	90.8	90.0	92.7	100.0	97.2	95.6	98.0	93.9	92.0
	Lowest	52.5	48.1	52.0	48.4	47.5	57.2	52.0	51.9	54.2	49.8
	Mean highest	89.2	80.9	83.4	85.1	86.5	83.4	86.4	90.0	85.1	83.8
	Mean lowest	62.7	61.4	61.9	60.4	55.8	62.9	62.6	60.9	63.5	60.9
	Monthly mean	77.0	71.7	74.5	74.1	75.6	73.1	74.2	76.5	74.6	72.5
August.	Highest	97.1	91.5	88.0	93.7	96.5	90.1	93.6	97.6	91.8	91 7
	Lowest	41.9	40.3	40.0	31.4	35.1	45.1	44.0	41.0	43.2	40.0
	Mean highest	80.9	74.0	77.2	76.9	80.0	76.0	76.0	83.1	77.2	76.0
	Mean lowest	56.8	54.1	56.4	50.4	47.7	56.4	53.6	50.2	53.3	50.7
	Monthly mean	69.1	64.4	67.1	64.4	68.3	66.2	67.7	69.0	66.6	64.5
Septem'r.	Highest	91.0	82.1	81.0	87.7	88.7	79.1	84.6	85.6	81.0	82.7
	Lowest	31.0	31.4	27.0	20.5	25.3	35.1	31.5	27.9	31.0	30.9
	Mean highest	70.1	65.9	66.6	67.8	68.9	65.8	67.2	71.9	67.4	64.6
	Mean lowest	48.9	47.8	46.5	43.1	40.1	47.2	45.6	41.2	45.1	42.5
	Monthly mean	60.2	56.8	57.5	55.0	58.2	56.4	57.6	58.3	56.8	54.1
October.	Highest	79.9	73.5	73.0	75.9	75.0	65.9	72.9	74.7	64.1	64.1
	Lowest	21.0	20.1	18.0	14.0	12.0	19.4	14.6	13.9	21.3	14.9
	Mean highest	58.7	52.1	54.4	52.0	55.7	52.1	52.8	55.5	52.1	50.5
	Mean lowest	35 6	38.7	34.3	33.6	29.0	35.5	36.6	32.1	35.4	34.3
	Monthly mean	46.2	44.7	44.7	42.3	45.9	44.2	43.8	44.6	44.3	42.2
Novemb'r.	Highest	64.5	58.1	64.0	61.1	64.0	57.6	65.6	59.7	60.1	60.6
	Lowest	15.1	13.4	4.0	—0.6	3.6	6.4	0.3	0.9	—1.5	—5.2
	Mean highest	47.0	42.4	44.7	40.6	43.9	41.1	40.3	41.4	38.0	36.1
	Mean lowest	27.7	30.5	27.2	26.0	21.6	28.5	26.2	21.7	24.8	22.9
	Monthly mean	37.4	36.2	35.6	33.4	37.4	35.1	32.8	32.4	32.5	29.3
Decemb'r.	Highest	56.6	50.5	51.0	48.3	56.0	47.1	48.6	46.8	52.9	41.6
	Lowest	1.0	9.5	1.0	—1.2	1.6	0.0	—3.4	—9.2	—15.9	—19.2
	Mean highest	35.4	32.6	34.0	30.4	34.6	33.2	31.2	30.7	25.6	23.9
	Mean lowest	19.9	25.0	20.3	19.3	14.8	22.5	19.3	14.6	12.6	9.2
	Monthly mean	28.1	28.9	28.3	25.8	29.4	28.3	25.8	22.9	19.2	17.3
	Annual mean	47.7	44.3	46.0	43.4	46.6	44 2	42.7	43.9	42.0	39.8

THE WEATHER.

TABLE No. II.—Showing for each month the annual average of the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario derived from the six years 1882-7; also the average annual mean at each station for the same period.

	Temperature.	Windsor.	Goderich.	Simcoe.	Stratford.	Hamilton.	Toronto.	Barrie.	Peterboro'.	Cornwall.	Pembroke.
		°	°	°	°	°	°	°	°	°	°
January.	Highest	50.2	45.6	48.0	45.7	50.6	44.0	44.2	43.2	45.2	41.4
	Lowest	−9.1	−8.3	−14.9	−20.8	−11.6	−14.1	−28.1	−25.4	−26.4	−34.7
	Mean highest	28.0	25.2	27.8	24.4	30.0	25.9	23.5	23.8	20.6	18.8
	Mean lowest	11.4	12.6	10.7	8.8	9.1	10.4	2.4	4.1	0.8	−4.1
	Monthly mean	20.0	18.9	20.0	16.2	20.7	18.7	14.2	14.6	10.5	6.7
February.	Highest	54.2	46.6	49.7	45.4	50.1	41.9	44.3	44.4	46.6	44.2
	Lowest	−6.7	−8.3	−7.4	−14.5	−6.2	−9.0	−15.6	−15.2	−17.5	−23.1
	Mean highest	32.7	27.9	31.0	27.7	33.4	28.4	26.7	26.4	23.7	23.1
	Mean lowest	14.2	13.1	12.9	8.7	11.9	12.3	5.7	5.2	4.5	0.9
	Monthly mean	24.4	20.4	22.3	18.5	23.2	20.9	16.6	17.0	14.2	12.7
March.	Highest	59.8	49.1	52.4	49.9	55.1	49.0	46.6	48.9	46.8	47.4
	Lowest	2.5	−2.4	−2.3	−9.5	−2.3	−1.5	−13.2	−10.7	−14.4	−20.9
	Mean highest	39.0	32.1	34.7	32.5	37.9	33.2	31.3	32.4	30.1	30.9
	Mean lowest	19.8	18.2	15.8	13.6	17.9	18.1	11.5	12.7	11.5	8.2
	Monthly mean	30.2	24.7	27.3	23.4	28.4	25.8	22.5	23.6	21.0	19.1
April.	Highest	77.8	73.3	73 4	73.5	78.0	68.1	70.3	73.5	70.9	73.4
	Lowest	17.3	17.0	17.5	12.3	16.8	19.5	11.1	13.7	13.9	8.3
	Mean highest	56.1	49.1	50.6	50.0	52.5	48.6	48.0	50.5	49.3	49.0
	Mean lowest	33.8	33.3	30.9	30.5	24.6	21.7	28.3	29.3	30.5	28.1
	Monthly mean	45.2	40.5	42.7	40.4	42.4	40.2	38.7	41.1	39.3	37.1
May.	Highest	84.6	78.2	75.3	79.3	83.6	75.0	79.2	80.2	81.8	85.2
	Lowest	32.5	32.9	31.2	29.6	29.1	31.9	29.2	30.3	30.5	29.9
	Mean highest	68.0	62.0	64.1	64.4	64.8	61 2	62.7	66.1	61.6	66.9
	Mean lowest	43.9	44.4	43.2	42.4	38.8	42.8	41.1	41.4	44.3	42.2
	Monthly mean	57.0	53.3	55.1	53.6	53.9	52.1	53.0	55.7	55.0	53.9
June.	Highest	90.8	85.7	83.1	85.5	88.4	83.1	86.6	87.3	87.4	92.1
	Lowest	42.9	42.1	40.2	38.5	37.8	41.6	41.2	42.5	41.5	41.7
	Mean highest	77.9	72.6	74.3	72.9	75.9	72.1	73.9	77.1	75.7	77.1
	Mean lowest	53.9	54.1	51.9	51.7	48.9	52.0	51.8	52.7	54.0	53.0
	Monthly mean	67.5	63.3	64.5	63.6	64.5	62.4	62.8	65.9	64.7	64.1
July.	Highest	93.2	87.9	86.9	88.3	93.7	89.0	89.7	91.3	89.4	92.2
	Lowest	47.9	45.9	45.7	43.6	42.6	48.7	45.4	47.6	48.3	44.8
	Mean highest	83.3	75.9	78.0	77 7	80.9	77.1	78.3	80.8	78.9	79.6
	Mean lowest	59.6	57.8	56.5	55.3	54.5	57.3	56.4	56.4	58.8	56.2
	Monthly mean	72.4	67.4	69.6	67.2	70.4	67.5	68.5	70.2	68.3	68.4
August.	Highest	92.5	87.6	85.9	88.0	91.3	86.7	88.5	89.9	89.8	92.3
	Lowest	45.1	44.6	41.6	38.2	41.9	45.3	42.9	40.6	42.0	41.4
	Mean highest	79.9	74.0	75.4	74.8	78.1	74.4	75.0	77.5	77.3	77.3
	Mean lowest	57.3	56.5	55.1	51.6	53.2	56.0	54.3	53.6	55.3	54.2
	Monthly mean	68.7	65.2	66.5	63.8	68.1	65.3	65.7	67.0	66.7	65.4
Septem'r.	Highest	89.8	83.7	81.9	84.4	88.4	82.4	85.2	86.2	83.7	85.8
	Lowest	37.7	36.8	32.8	30.2	32.5	37.5	35.1	33.6	31.3	33.1
	Mean highest	74.2	68.6	69.1	68.5	71.2	67.6	68.4	71.1	69.1	67.9
	Mean lowest	51.5	51.3	48.4	47.1	46.0	49.0	48.1	46.3	47.4	45.6
	Monthly mean	63.3	60.0	59.9	57.5	61.2	58.5	58.5	59.1	57.5	56.4
October.	Highest	82.9	74.6	75.0	76.6	79.0	72.3	75.5	76.7	74.0	74.5
	Lowest	26.0	26.9	24.5	21.3	20.9	24.8	21.9	19.7	21.7	22.1
	Mean highest	62.1	56.4	58.0	56.1	59.9	55.1	55.7	57.0	55.4	55.5
	Mean lowest	39.7	41.7	38.4	37.7	35.9	39.0	38.0	36.5	37.4	36.1
	Monthly mean	51.2	48.8	48.9	46.3	49.8	47.5	47.3	47.2	46.2	44.9
Novemb'r.	Highest	67.1	61.9	64.1	63.8	67.3	60.0	63.6	60.8	61.5	60.1
	Lowest	15.9	16.6	13.2	6.9	11.7	12.1	8.3	8.4	4.3	4.2
	Mean highest	46.7	42.6	44.9	41.7	46.8	42.3	41.2	41.7	39.8	38.6
	Mean lowest	29.8	31.6	29.3	27.0	26.3	29.4	27.2	25.5	25.8	25.1
	Monthly mean	38.4	37.0	37.3	34.2	38.3	36.2	34.3	34.6	33.0	30.7
Decemb'r.	Highest	52.7	45.4	49.5	46.5	51.2	45.7	46.3	45.2	47.8	45.2
	Lowest	−2.0	2.4	−3.7	−10.3	−1.3	−3.0	−11.1	−12.9	−16.5	−21.4
	Mean highest	33.6	31 2	33.3	29.6	34.4	31.7	29.5	29.9	25.4	23.4
	Mean lowest	18.6	21.4	18.2	15.7	17.0	19.1	14.8	12.2	9.6	7.4
	Monthly mean	26.8	26.4	26.7	23.4	27.5	26.1	23.0	22.3	17.7	16.0
	Annual mean	47.1	43.8	45.2	42.3	45.7	43.4	42.1	43.2	41.2	39.6

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TABLE No. III.—Monthly summary of bright sunshine at the principal stations in Ontario in 1887, showing the number of hours the sun was above the horizon, the hours of registered sunshine and the total for the year.

Months.	Hours of sun above horizon.	Windsor.	Woodstock.	Stratford.	Niagara F. So.	Toronto.	Barrie.	Lindsay.	Kingston.	Cornwall.	Pembroke.
January	285.7	80.2	60.2	49.5	47.9	68.1	45.8	75.2	62.9	67.1	128.5
February	291.4	58.9	60.2	49.3	62.5	81.0	52.8	91.1	87.0	96.9	151.1
March	369.9	163.8	149.0	123.9	127.7	154.4	126.4	156.2	152.3	148.7	240.6
April	406.4	189.8	176.7	149.3	171.6	178.0	125.5	191.6	211.3	171.3	223.0
May	461.1	240.5	263.2	274.5	272.8	290.7	253.1	284.7	260.7	241.8	337.8
June	465.7	253.4	238.8	242.2	230.7	232.4	217.5	235.2	243.9	240.1	259.7
July	470.9	334.6	300.6	336 2	286.1	310.0	280.6	305.2	295.5	271.4	233.5
August	434.5	229.0	236.6	242.5	277.0	267.1	188.9	251.1	282.3	259.7	277.7
September	376.3	148.3	177.0	169.7	167.8	190.4	138.1	167.2	172.9	136 8	212.4
October	340.2	144.2	130.0	102.1	119.3	141.1	81.5	107.4	98.7	73.7	79.9
November	286.9	108.2	89.5	72.2	97.5	99.9	79.4	99.1	87.3	70.5	92.9
December	274.3	68.4	46.0	35.9	52.7	50.1	17.9	33.3	52.9	47.6	74.3
Total	4463.3	2019.3	1927.8	1847.3	1913.6	2063.2	1607.5	1997.3	2007.7	1825.6	2311.4

TABLE No. IV.—Monthly average of bright sunshine at the principal stations in Ontario for the six years 1882-7, showing the number of hours the sun was above the horizon and the hours of registered sunshine.

Months.	Hours of sun above horizon.	Windsor.	Woodstock.	Stratford.	Niagara F. So.	Toronto.	Barrie.	Lindsay.	Kingston.	Cornwall.	Pembroke.
January	285.7	69.5	58.3	69.9	43.0	74.3	49.1	74.1	68.0	72.4	76.1
February	293.2	78.3	80.6	70.1	62.9	96.6	63.1	95.5	92.8	96.6	90.8
March	369.9	144.8	141.5	111.7	116.7	154.4	130.1	163.0	153.8	152.4	172.7
April	406.4	184.7	192.8	164.7	152.1	186.6	154.6	198.7	185.0	199.4	173.3
May	461.1	219.7	210.1	200.6	210.1	234.7	212.1	236.1	224.2	227.6	209.9
June	465.7	255.6	245.9	243.7	246.9	272.2	238.0	265.5	244.1	247.9	218.9
July	470.9	281.6	263.3	276.2	255.4	285.9	255.9	279.3	254.6	254.6	224.8
August	434.5	234.8	224.7	240.4	245.6	255.9	208.1	239.7	256.5	251.1	227.8
September	376.3	180.9	196.3	170.0	185.6	211.8	153.7	205.2	201.9	187.0	165.3
October	340.2	144.4	137.2	125.0	126.5	149.5	86.1	139.8	126.3	114.2	103.1
November	286.9	85.2	66.3	68.3	67.8	80.4	50.6	75.2	74.6	62.4	63.7
December	274.3	55.2	44.9	43.7	43.8	38.7	28.0	51.0	59.3	46.6	58.0
Total	4465.1	1934.7	1861.9	1784.3	1756.4	2041.0	1629.4	2023.1	1941.1	1912.2	1784.4

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TABLE No. V.—Monthly summary of the average fall of Rain and Snow in the several districts of Ontario in 1887.

Months.	West and south-west.		North-west and north.		Centre.		East and north-east.	
	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
	in.	in.	in.	in.	in.	in.	in.	in.
January	1.08	26.6	1.72	29.3	1.00	23.0	1.52	27.0
February	4.01	10.2	1.23	28.2	2.50	20.1	1.26	29.6
March	0.85	6.4	0.12	11.1	0.60	7.3	0.50	15.6
April	1.41	0.7	1.51	4.3	1.64	0.2	1.78	1.5
May	1.92	.....	1.34	.....	1.41	.....	1.11	.....
June	2.83	.....	2.14	.....	2.21	.....	1.95	.....
July	1.19	.....	3.27	.....	1.26	.....	2.02	.....
August	2.06	.....	1.05	.....	1 11	.....	1.34	.....
September	1.76	.....	1.45	.....	1.26	.....	0.95	.....
October	2.38	1.3	3.40	4.7	1.78	0.2	2.21	2.5
November	2.50	5.6	1.54	18.4	2.35	6.3	1.51	8.7
December	2.16	13.9	1.55	18.9	2.09	15.4	1.47	11.1
Totals	24.15	64.7	20.32	114.9	19.21	72.5	17.62	96.0

TABLE No. VI.—Monthly summary of the annual average fall of Rain and Snow in the several districts of Ontario for the six years 1882-7.

Months.	West and south-west.		North-west and north.		Centre.		East and north-east.	
	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
	in.	in.	in.	in.	in.	in.	in.	in.
January	1.06	19.1	1.14	32.4	1.13	20.1	0.93	25.1
February	1.97	11.7	0.83	22.7	1.50	12.3	0.84	19.2
March	1.31	11.4	0.95	14.2	1.17	10.4	0.92	16.0
April	1.60	4.6	1.37	4.1	1.52	4.3	1.37	6.1
May	3.24	0.2	2.49	0.4	2.72	0.2	2.52	0.5
June	3.25	.....	2.96	.....	2.94	.....	2.83	.....
July	2.77	.....	2.56	.....	2.47	.....	3.06	.....
August	3.02	.....	2.49	.....	2.38	.....	2.43	.....
September	2.51	.....	3.12	.....	2.57	.....	2.62	.....
October	2.64	0.4	3.02	1.4	2.08	0.1	2.10	0.5
November	2.21	7.0	2.01	16.1	2.02	5.9	1.71	10.3
December	1.25	18.1	1.08	25.5	1.21	14.7	0.96	17.2
Totals	26.83	72.5	24.02	116.8	23.71	68.0	22.29	94.9

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TABLE No. VII.—Summary of the total fall of Rain and Snow, and of the number of days on which Rain and Snow fell in Ontario during the years 1886-7 at stations reporting for the whole year, and the averages for the Province.

Stations.	Observers.	Rain.				Snow.			
		1887.		1886.		1887.		1886.	
		Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.
ESSEX—									
Cottam	W. E. Wagstaff	30.30	89	27.69	94	41.1	41	65.3	41
Maidstone	T. F. Kane	24.45	83	22.78	78	.....	.....	.....	.....
Windsor	A. Sinclair, M.A	25.97	95	23.15	83	39.3	38	64.3	39
KENT—									
Chatham	W. D. A. Ross	29.96	61	22.66	54	26.6	42	72.3	37
Blenheim	W. R. Fellows	29.94	72	29.42	78	44.5	17	85.5	43
Dealtown	S. J. Pardo	28.49	94	32.31	96	30.1	33	47.4	40
Ridgetown	Thos. Scane	26.40	95	25.00	98	57.5	41	82.9	45
ELGIN—									
Aylmer	W. H. Draper	23.98	85	32.12	79	64.5	28	72.0	28
Cowal	S. Maccoll	24.67	67	26.34	84	58.1	33	74.1	35
Lyons	W. McCredie	22.42	76	34.21	79	56.1	35	65.8	41
Port Stanley	M. Payne	24.37	125	28.48	121	53.6	75	94.0	76
NORFOLK—									
Port Dover	H. Morgan	21.10	110	30.08	112	45.2	60	88.3	74
Simcoe	D. S. Patterson, B.A.	16.87	74	24.47	71	41.0	39	43.5	31
LAMBTON—									
Birnam	J. S. Mellor	25 05	88	24.62	78	79.9	67	126.7	69
Oil Springs	A. Smyth	22.93	72	23.55	81	43.1	34	70.6	35
Sarnia	Wm. Mowbray	21.55	67	22.31	66	11.4	20	47.5	24
Thedford	Martin Wattson	24.62	92	24.49	94	62.0	43	90.0	47
Watford	D. Ross	23.12	67	26.64	59	.....	.....	.....	.....
HURON—									
Goderich	H. J. Strang, B.A.	29.96	100	26.66	106	68.6	75	97.6	75
Goderich L. H.	R. Campbell	19.92	70	20.60	63	79.5	39	124.7	64
Zurich	G. Hess	29.38	83	23.88	89	81.3	40	118.8	47
Sunshine	G. Hood	24.35	63	28.96	88	141.9	58	119.6	65
BRUCE—									
Lucknow	M. Macdonald	30.84	86	26.98	106	106.8	76	129.4	71
Point Clark	J. Ray	22.39	43	25.69	54	99.0	30	114.0	41
Saugeen	Mrs. J. R. Stewart	21.38	91	24.12	102	144.0	91	123.5	76
GREY—									
Bognor	C. H. Heming	20.73	59	27.49	73	113.0	52	88.0	43
Durham	J. Gunn, M.D	27.64	89	25.86	83	142.0	75	150.0	70
Presque Isle	J. McKenzie	22.25	71	26.70	88	113.0	50	101.0	45
SIMCOE—									
Barrie	H. B. Spotton, M.A.	14.01	80	20.63	72	98.5	59	78.1	57
Coldwater	J. N. Lazonby	21.57	59	23.76	62	144.1	53	121.8	38
Orillia	H. A. Fitton	12.87	84	26.44	106	151.6	84	99.9	68
MIDDLESEX—									
Ailsa Craig	J. Rennie	21.56	53	20.77	43	91.0	37	93.0	26
London	E. B. Reed	23.15	68	26.54	71	89.7	45	133.5	50
Wilton Grove	H. Anderson	20.23	61	27.57	74	54.5	27	59.0	41
OXFORD—									
Otterville	Thos. Wright	23.02	74	29.52	76	57.5	32	76.0	32
Princeton	D. Beamer	22.12	94	29.57	86	57.1	38	74.5	44
Woodstock	Prof. Wolverton, M.A	22.19	89	23.90	93	75.0	53	67.2	63
BRANT—									
Paris	John Kay	23.00	87	28.92	94	54.3	36	51.9	33
St. George	E. E. Kitchen, M.D	22.66	88	31.70	94	74.5	60	79.8	54
PERTH—									
Stratford	Wm. McBride, M.A	32.34	94	28.34	81	96.8	47	108.1	58
Listowel	A. Kay	21.87	80	29.07	93	131.8	61	113.5	58
WELLINGTON—									
Fergus	A. D. Ferrier	25.29	104	32.38	115	135.8	71	108.7	67
Guelph	C. A. Zavitz	14.98	79	23.31	76	65.4	54	71.5	57
Elora	T. Connor	24.99	71	30.55	80	71.1	44	84.7	35

TABLE No. VII.—THE WEATHER.—*Continued.*

Stations.	Observers.	Rain.				Snow.			
		1887.		1886.		1887.		1886.	
		Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.
WATERLOO—									
Conestogo	G. A. McIntyre	21.77	93	31.45	90	74.6	73	74.2	65
DUFFERIN—									
Orangeville	N. Gordon	22.93	72	28.89	88	104.9	49	59.8	42
WENTWORTH—									
Copetown	J. Ireland	20.10	93	28.25	90	58.8	39	65.4	36
Hamilton	P. S. Campbell, M.A	16.98	54	23.54	58	21.9	22	44.6	29
Stoney Creek	C. T. Van Wagner	27.26	93	35.57	92	62.0	36	41.0	34
HALTON—									
Georgetown	Jos. Barber, jun	23.28	123	27.06	112	89.1	57	81.5	88
YORK—									
Aurora	Rev. W. Amos	16.07	71	23.01	92	64.5	52	55.6	38
Scarboro'	R. Martin	19.27	100	27.12	103	79.4	59	63.4	52
Toronto	Observatory	17.97	106	27.73	112	77.9	78	73.5	66
ONTARIO—									
Oshawa	Rev. J. Middleton	19.24	70	26.95	77	78.1	28	64.6	30
LEN'X. & ADDINGTON									
Denbigh	J. Lane	16.96	45	27.44	59	91.5	31	109.5	35
FRONTENAC—									
Harrowsmith	J. Donnelly	18.62	70	28.59	62	83.5	39	71.0	40
Kingston	A. P. Knight, M.A.	23.00	108	29.92	95	96.6	73	118.1	81
LEEDS & GRENVILLE.									
Prescott	C. Chapman	18.17	67	27.34	83	107.6	52	146.5	62
STORMONT—									
Cornwall	W. D. Johnson, M.A	14.06	60	22.58	74	114.1	51	93.3	44
CARLETON—									
Ottawa	A. McGill, B.A	19.53	69	25.29	103	175.0	46	115.3	62
RENFREW—									
Clontarf	A. Schultz	16.11	62	24.07	102	111.3	65	115.7	66
Pembroke	L. Lapp	20.13	54	22.93	57	59.7	54	82.0	32
Renfrew	W. E. Smallfield	15.12	68	18.95	75	75.5	37	73.5	35
Rockliffe	W. H. McIntyre	10.79	56	25.68	74	113.1	72	87.6	71
LANARK—									
Oliver's Ferry	W. J. McLean	15.70	44	24.46	64	69.9	37	53.8	21
VICTORIA—									
Bobcaygeon	J. Stewart	19.66	77	25.47	92	98.9	51	74.4	44
Lindsay	Thos. Beall	16.93	103	23.36	105	138.4	68	102.8	56
PETERBOROUGH—									
Ennismore	Thos. Tellford	22.13	84	28.08	91	85.4	65	77.7	46
Norwood	Rev. J. Carmichael	21.02	53	27.89	71	102.5	37	132.2	34
Peterborough	J. H. Long, M.A	15.71	80	24.05	92	74.6	47	84.3	48
HALIBURTON—									
Haliburton	C. R. Stewart	16.32	83	22.60	93	87.9	64	73.6	62
HASTINGS—									
Deseronto	J. Russell	13.21	78	18.45	82	66.6	35	79.4	45
Shannonville	J. M. Kemp	17.85	54	18.73	48	78.0	29	86.0	27
MUSKOKA—									
Bala	E. B. Sutton	20.72	91	31.86	126	126.2	88	120.3	79
Beatrice	J. Hollingworth	22.62	72	32.52	102	141.0	65	114.9	47
Charlinch	C. J. Tisdale	23.20	92	29.73	102	157.8	89	140.4	78
Gravenhurst	T. M. Robinson	19.83	84	24.61	91	115.6	65	106.0	55
PARRY SOUND—									
Axe Lake	H. Brown	16.00	44	24.35	61	144.7	56	107.5	53
Sprucedale	A. McKenzie	21.40	55	23.67	62	137.3	37	99.6	26
Parry Sound	Rev. R. Mosley	22.24	100	28.27	97	117.9	89	108.7	69
Lynch Lake	G. Ambury	19.58	77	29.75	75	144.2	77	102.0	51
ALGOMA—									
Port Arthur	W. P. Cooke	20.13	65	18.18	83	49.0	50	51.0	38
Savanne	Agent C. P. R.	16.10	45	11.31	64	67.0	39	70.0	51
Average for the Province		21.46	78	25.93	84	86.8	51	88.9	49

THE WEATHER.

TABLE No. VIII.—Comparative Meteorological Register for the eight years 1880-7, as recorded at Toronto Observatory in Latitude 43° 39′.4 North, and Longitude 5h. 17m. 34·7 s. West.

Schedule.	1887.	1886.	1885.	1884.	1883.	1882.	1881.	1880.
	°	°	°	°	°	°	°	°
Mean Temperature	44·14	43·71	41·57	43·79	41·95	45·42	46·03	45·43
Difference from average [47 yrs.]	+ 0·03	— 0·40	— 2·54	— 0·32	— 2·16	+ 1·31	+ 1·92	+ 1·32
Thermic anomaly [lat. 43° 40′]	— 6·88	— 7·31	— 9·45	— 7·23	— 9·07	— 5·60	— 4·99	— 5·59
Highest temperature	97·2	89·5	88·6	89·6	83·4	89·9	92·7	89·9
Lowest temperature	— 16·6	— 22·8	— 16·1	— 13·3	— 10·5	— 17·4	— 15·1	— 8·3
Annual range	113·8	112·3	104·7	102·9	93·9	107·3	107·8	98·2
Mean daily range	17·12	16·53	16·85	17·05	17·07	15·70	16·61	15·96
Greatest daily range	34·0	32·6	39·2	34·8	38·4	36·0	40·9	30·8
Mean height of Bar. at 32° Fah.	29·6329	29·6255	29·5933	29·6273	29·6496	29·6515	29·6311	29·6359
Difference from average [46 yrs.]	+ ·0154	+ ·0080	— ·0242	+ ·0098	+ ·0321	+ ·0340	+ ·0136	+ ·0184
Highest barometer	30·607	30·283	30·300	30·412	30·365	30·447	30·461	30·323
Lowest barometer	28·704	28·752	28·714	28·807	28·803	28·781	28·911	28·800
Annual range	1·903	1·531	1·586	1·605	1·562	1·666	1·550	1·523
Mean humidity of the air	75	77	77	76	77	74	75	77
Mean elasticity of aqueous vapour	0·261	0·260	0·249	0·261	0·249	0·265	0·283	0·260
Mean of cloudiness	0·63	0·61	0·61	0·63	0·64	0·63	0·62	0·62
Difference from average [33 yrs.]	+ ·01	— ·01	— ·01	+ ·01	+ ·02	+ ·01	·00	·00
	°	°	°	°	°	°	°	°
Resultant direction of the wind	N 46 W	N 56 W	N 62 W	N 55 W	N 77 W	N 47 W	N 50 W	N 80 W
" velocity of the wind	1·92	2·13	2·60	3·30	2·39	2·11	2·70	2·86
Average velocity [miles per hour]	9·88	9·73	9·95	10·29	10·08	10·42	9·91	10·54
Difference from average [12 yrs.]	+ 0·26	+ 0·11	+ 0·33	+ 0·67	+ 0.46	+ 0·80	+ 0·29	+ 0·92
Total amount of rain in inches	17·969	27·726	26·351	20·532	25·734	20·587	21·138	30·922
Difference from average [47 yrs.]	— 9·763	— ·006	— 1·381	— 7·200	— 1·998	— 7·145	— 6·594	+ 3·190
Number of days of rain	106	112	103	123	124	110	123	140
Total amount of snow in inches	77·9	73·5	65·6	80·2	84·0	42·5	57·6	44·0
Difference from average [44 yrs.]	+ 8·0	+ 3·6	— 4·3	+ 10·3	+ 14·1	— 27·4	— 12·3	— 25·9
Number of days of snow	78	66	73	69	74	62	64	78
Number of fair days	203	196	203	184	181	209	191	163
Number of auroras observed	25	29	31	20	46	60	23	23
Possible to see aurora [nights]	180	189	195	202	207	204	187	198
Number of thunderstorms	22	26	19	30	32	28	24	47
No. of hours of possible sunshine	4463·3	4463·3	4463·3	4474·4	4463·3	4463·3	.....	.....
Number of hours bright sunshine	2063·5	2034·4	2018·3	1931·8	2038·8	2169·5	.....	.....
Difference from average [6 yrs.]	+ 20·8	— 8·3	— 24·4	— 110·9	— 3·9	+ 126·8	.....	.....

RURAL AREA.

TABLE No. IX.—Showing by County Municipalities and groups of Counties the Rural Area of Ontario as returned by Municipal Assessors for 1887.

Counties.	Acres of Assessed Land.			Acres cleared.		Acres woodland.	Acres swamp, marsh or waste.	Per cent. cleared
	Resident.	Non-resident.	Total occupied.	1887.	1886.			
Essex	408,924	21,828	430,752	186,095	183,928	224,602	20,055	43.2
Kent	535,616	26,785	562,401	282,585	273,622	250,918	28,898	50.2
Elgin	431,256	4,053	435,309	260,003	261,904	160,248	15,058	59.7
Norfolk	390,843	9,482	400,325	227,598	223,485	137,986	34,741	56.9
Haldimand	271,449	10,072	281,521	197,872	197,922	72,216	11,433	70.3
Welland	227,183	2,949	230,132	159,212	156,051	59,803	11,117	69.2
Totals	2,265,271	75,169	2,340,440	1,313,365	1,296,912	905,773	121,302	56.1
Lambton	604,293	60,110	664,403	253,525	252.130	395,229	15,649	38.2
Huron	789,238	9,579	798,817	525,936	522,029	182,395	90,486	65.8
Bruce	776,120	37,041	813,161	428,400	422,310	312,445	72,316	52.7
Totals	2,169,651	106,730	2,276,381	1,207,861	1,196,469	890,069	178,451	53.1
Grey	1,023,027	35,622	1,058,649	536,497	521,543	384,146	138,006	50.7
Simcoe	900,303	61,843	962,146	453,852	439,166	471,340	36,954	47.2
Totals	1,923,330	97,465	2,020,795	990,349	960,709	855,486	174,960	49.0
Middlesex	748,255	9,302	757,557	514,563	501,113	229,355	13,639	67.9
Oxford	470,396	971	471,367	334,058	334,243	105,620	31,689	70.9
Brant	215,626	2,256	217,882	168,427	168,045	29,051	20,404	77.3
Perth	515,730	2,110	517,840	354,175	350,260	123,216	40,449	68.2
Wellington	621,267	6,215	627,482	432,175	427,635	103,419	91,888	68.9
Waterloo	306,122	1,296	307,418	233,112	231,950	57,570	16,736	75.8
Dufferin	338,985	18,049	357,034	179,139	177,591	91,430	86,465	50.2
Totals	3,216,381	40,199	3,256,580	2,215,649	2,190,837	739,661	301,270	68.0
Lincoln	189,739	1,744	191,483	148,506	149,246	38,769	4,208	77.6
Wentworth	270,456	2,084	272,540	205,991	202,983	43,839	22,710	75.6
Halton	223.527	848	224,375	166,260	165,964	45,947	12,168	74.1
Peel	288,292	235	288,527	233,806	230,808	42,264	12,457	81.0
York	528,784	9,048	537,832	413,820	403,668	77,276	46,736	76.9
Ontario	479,384	19,516	498,900	331,468	327,754	94,991	72,441	66.4
Durham	366,406	2,634	369,040	271,412	270,619	70,071	27,557	73.5
Northumberland	431,668	4,229	435,897	312,132	308,956	101,814	21,951	71.6
Prince Edward	232,406	1,527	233,933	182,919	181,019	42,464	8,550	78.2
Totals	3,010,662	41,865	3,052,527	2,266,314	2,241,017	557,435	228,778	74.2
Len. and Addington	392,448	12,688	405,136	199,012	200,094	123,243	82,881	49.1
Frontenac	567,968	83,432	651,400	202,879	198,631	324,114	124,407	31.1
Leeds and Grenville	730,791	7,091	737,882	408,186	402,626	214,930	114,766	55.3
Dundas	235,291	2,468	237,759	137,770	134,351	69,195	30,794	57.9
Stormont	240,500	7,821	248,321	114,606	112,006	122,815	10,900	46.2
Glengarry	289,083	340	289,423	140,144	135,818	124,080	25,199	48.4
Prescott	257 521	26,570	284,091	128,640	124,545	117,806	37,645	45.3
Russell	226,074	27,213	253,287	76,682	74,244	176,177	428	30.3
Carleton	545,785	17,959	563,744	271,747	260,708	166,345	125,652	48.2
Renfrew	828,292	38,421	866,713	244,926	239,914	546,908	74,879	28.3
Lanark	612,408	46,348	658,756	284,333	279,999	240,164	134,259	43.2
Totals	4,926,161	270,351	5,196,512	2,208,925	2,162,936	2,225,777	761,810	42.5
Victoria	531,649	32,225	563,874	234,089	232,455	214,036	115,749	41.5
Peterborough	497,760	35,377	533,137	214,183	211,556	254,422	64,532	40.2
Haliburton	534,556	22,594	557,150	28,006	25,230	510,626	18,518	5.0
Hastings	894,073	67,215	961,288	320,390	317,321	562,765	78,133	33.3
Totals	2,458,038	157,411	2,615,449	796,668	786,562	1,541,849	276,932	30.5
Muskoka	440,353	62,925	503,278	50,967	50,507	380,193	72,118	10.1
Parry Sound	223,031	32,326	255,357	24,168	21,433	225,272	5,917	9.4
Algoma	241,343	40,355	281,698	34,092	31,089	217,268	30,338	12.1
Totals	904,727	135,606	1,040,333	109,227	103,029	822,733	108,373	10.5
The Province. 1887	20,874,221	924,796	21,799,017	11,108,358	.....	8,538,783	2,151,876	51.0
The Province. 1886	20,861,552	897,243	21,758,795	.....	10,938,471	8,676,686	2,143,638	50.3

FALL WHEAT.

TABLE No. X.—Showing by County Municipalities and groups of Counties the area and produce of Fall Wheat in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	30,284	588,115	19.4	32,138	712,178	22.2	32,477	654,288	20.1
Kent	60,013	971,010	16.2	63,567	1,390,846	21.9	61,515	1,240,348	20.2
Elgin	43,615	654,225	15.0	42,405	975,315	23.0	44,970	893,949	19.9
Norfolk	31,925	461,954	14.5	34,797	542,485	15.6	33,193	611,516	18.4
Haldimand	33,085	520,758	15.7	34,612	534,409	15.4	33,169	578,372	17.4
Welland	22,826	349,923	15.3	22,761	445,205	19.6	23,096	388,407	16.8
Totals	221,748	3,545,985	16.0	230,280	4,600,438	20.0	228,420	4,366,880	19.1
Lambton	35,499	628,332	17.7	32,259	647,116	20.1	34,111	668,151	19.6
Huron	69,197	948,690	13.7	69,447	1,590,336	22.9	71,860	1,473,418	20.5
Bruce	45,402	656,513	14.5	46,699	1,025,510	22.0	51,911	1,040,483	20.0
Totals	150,098	2,233,535	14.9	148,405	3,262,962	22.0	157,882	3,182,052	20.2
Grey	22,026	363,209	16.5	22,703	451,790	19.9	28,606	587,801	20.5
Simcoe	51,019	881,608	17.3	43,541	741,939	17.0	54,859	1,183,975	21.6
Totals	73,045	1,244,817	17.0	66,244	1,193,729	18.0	83,465	1,771,776	21.2
Middlesex	71,820	1,151,993	16.0	64,948	1,443,145	22.2	75,835	1,548,622	20.4
Oxford	40,590	742,797	18.3	35,179	761,625	21.7	39,744	808,427	20.3
Brant	29,188	435,777	14.9	30,175	502,112	16.6	31,787	611,620	19.2
Perth	48,309	634,780	13.1	47,772	1,076,781	22.5	47,461	990,795	20.9
Wellington	26,077	431,835	16.6	25,401	557,552	22.0	29,345	605,784	20.6
Waterloo	40,647	666,611	16.4	40,011	808,222	20.2	41,054	880,934	21.5
Dufferin	9,423	132,487	14.1	9,998	206,159	20.6	12,087	240,719	19.9
Totals	266,054	4,196,280	15.6	253,484	5,355,596	21.1	277,313	5,686,901	20.5
Lincoln	21,521	347,134	16.1	23,100	432,663	18.7	22,549	438,420	19.4
Wentworth	31,256	517,912	16.6	32,413	507,912	15.7	32,574	655,146	20.1
Halton	21,154	440,638	20.8	20,418	312,600	15.3	23,147	469,862	20.3
Peel	24,349	396,645	16.3	28,791	531,770	18.5	28,258	633,538	22.4
York	34,116	595,665	17.5	29,761	608,315	20.4	40,058	893,839	22.3
Ontario	6,799	127,413	18.7	4,994	106,971	21.4	11,129	248,850	22.4
Durham	3,216	58,692	18.3	2,959	68,678	23.2	3,339	70,501	21.1
Northumberland	9,849	169,893	17.3	9,172	231,318	25.2	9,819	216,109	22.0
Prince Edward	957	17,082	17.9	1,211	26,121	21.6	2,287	36,745	16.1
Totals	153,217	2,671,074	17.4	152,819	2,826,348	18.5	173,160	3,663,010	21.2
Lennox and Addington	1,285	13,942	10.9	1,602	32,296	20.2	2,063	36,370	17.6
Frontenac	954	12,936	13.6	903	17,609	19.5	2,084	39,521	19.0
Leeds and Grenville	2,885	40,274	14.0	3,479	72,468	20.8	5,737	105,792	18.4
Dundas	149	2,384	16.0	304	6,688	22.0	1,406	25,041	17.8
Stormont	428	6,848	16.0	312	6,240	20.0	848	15,264	18.0
Glengarry	279	3,906	14.0	215	3,296	15.3	764	12,298	16.1
Prescott	26	390	15.0	4	80	20.0	89	1,095	12.3
Russell	72	972	13.5	13	312	24.0	237	4,157	17.5
Carleton	821	14,450	17.6	135	2,511	18.6	1,885	27,305	14.5
Renfrew	254	4,542	17.9	275	4,813	17.5	1,214	21,215	17.5
Lanark	1,935	30,825	15.9	2,003	39,760	19.9	3,402	65,602	19.3
Totals	9,088	131,469	14.5	9,245	186,073	20.1	19,729	353,660	17.9
Victoria	7,668	134,343	17.5	9,563	221,001	23.1	9,510	191,119	20.1
Peterborough	8,355	152,646	18.3	9,604	249,704	26.0	10,011	216,799	21.7
Haliburton	118	2,242	19.0	74	1,140	15.4	88	1,397	15.9
Hastings	7,834	115,630	14.8	6,589	172,632	26.2	8,296	160,562	19.4
Totals	23,975	404,861	16.9	25,830	644,477	25.0	27,905	569,877	20.4
Muskoka	60	1,140	19.0	58	870	15.0	56	990	17.7
Parry Sound	27	459	17.0	3	60	20.0	41	754	18.4
Algoma	431	10,991	25.5	34	589	17.3	321	7,404	23.1
Totals	518	12,590	24.3	95	1,519	16.0	418	9,148	21.9
The Province	897,743	14,440,611	16.1	886,402	18,071,142	20.4	968,292	19,603,304	20.2

SPRING WHEAT.

TABLE No. XI.—Showing by County Municipalities and groups of Counties the area and produce of Spring Wheat in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	1,376	17,723	12.9	1,744	25,288	14.5	1,802	27,679	15.4
Kent	3,531	42,372	12.0	3,456	61,932	17.9	2,877	45,490	15.8
Elgin	1,084	10,840	10.0	3,356	48,091	14.3	2,137	32,498	15.2
Norfolk	781	6,942	8.9	1,056	12,883	12.2	966	13,884	14.4
Haldimand	3,015	27,286	9.1	2,891	35,473	12.3	3,062	42,469	13.9
Welland	1,054	9,275	8.8	1,528	20,445	13.4	1,907	26,846	14.1
Totals	10,841	114,438	10.6	14,031	204,112	14.5	12,751	188,866	14.8
Lambton	5,633	39,713	7.1	9,234	128,076	13.9	7,710	111,767	14.5
Huron	9,511	71,618	7.5	21,732	264,913	12.2	22,467	298,491	13.3
Bruce	12,869	120,840	9.4	15,873	247,301	15.6	15,313	210,104	13.7
Totals	28,013	232,171	8.3	46,839	640,290	13.7	45,490	620,362	13.6
Grey	31,905	309,478	9.7	38,329	556,920	14.5	47,533	664,288	14.0
Simcoe	33,644	358,645	10.7	36,088	693,972	19.2	36,468	555,997	15.2
Totals	65,549	668,123	10.2	74,417	1,250,892	16.8	84,001	1,220,285	14.5
Middlesex	7,439	57,355	7.7	18,763	252,925	13.5	14,485	218,513	15.1
Oxford	6,873	58,077	8.5	13,779	189,323	13.7	12,091	194,947	16.1
Brant	586	5,526	9.4	1,495	17,761	11.9	1,544	20,734	13.4
Perth	6,876	41,256	6.0	13,084	172,709	13.2	15,944	231,032	14.5
Wellington	15,787	123,612	7.8	19,521	286,959	14.7	24,039	338,906	14.1
Waterloo	2,873	22,697	7.9	5,529	74,089	13.4	6,641	96,680	14.6
Dufferin	18,977	229,432	12.1	17,989	293,401	16.3	20,960	294,427	14.0
Totals	59,411	537,955	9.1	90,160	1,287,167	14.3	95,704	1,395,239	14.6
Lincoln	1,244	10,624	8.5	2,183	27,768	12.7	2,480	36,935	14.9
Wentworth	2,103	19,621	9.3	2,853	37,916	13.3	2,937	44,373	15.1
Halton	2,642	25,258	9.6	3,224	44,491	13.8	3,670	54,122	14.7
Peel	9,899	108,889	11.0	10,779	160,823	14.9	13,372	219,143	16.4
York	23,629	256,138	10.8	24,754	461,662	18.7	27,528	468,152	17.0
Ontario	42,499	563,112	13.3	46,157	977,144	21.2	48,625	842,428	17.3
Durham	29,107	366,166	12.6	31,535	540,510	17.1	41,132	685,563	16.7
Northumberland	22,511	246,045	10.9	25,154	378,316	15.0	30,550	441,621	14.5
Prince Edward	5,705	79,870	14.0	5,877	87,332	14.9	7,473	103,934	13.9
Totals	139,339	1,675,723	12.0	152,516	2,715,962	17.8	177,767	2,896,271	16.3
Lennox and Addington	5,616	70,705	12.6	5,930	90,492	15.3	6,984	106,138	15.2
Frontenac	7,186	88,963	12.4	8,237	129,403	15.7	8,763	138,621	15.8
Leeds and Grenville	13,890	161,402	11.6	14,663	256,163	17.5	14,051	234,454	16.7
Dundas	5,534	92,252	16.7	5,940	129,492	21.8	4,877	95,145	19.5
Stormont	5,276	89,692	17.0	5,372	99,919	18.6	4,503	83,913	18.6
Glengarry	8,531	139,908	16 4	8,932	166,760	18.7	7,983	135,320	17.0
Prescott	8,519	120,799	14.2	9,125	199,655	21.9	8,169	132,388	16.2
Russell	3,980	59,023	14.8	4,480	86,822	19.4	4,369	74,950	17.2
Carleton	19,251	328,422	17.1	21,140	356,420	16.9	22,421	383,696	17.1
Renfrew	22,067	272,769	12.4	24,695	411,666	16.7	24,756	416,633	16.8
Lanark	14,280	175,358	12.3	14,373	225,944	15.7	14,400	229,572	15.9
Totals	114,130	1,599,293	14.0	122,887	2,152,736	17.5	121,276	2,030,830	16.7
Victoria	23,646	270,274	11.4	27,708	463,278	16.7	34,173	515,480	15.1
Peterborough	23,181	261,945	11.3	25,185	425,627	16.9	26,387	370,253	14.0
Haliburton	1,334	17,676	13.3	1,062	17,459	16.4	1,317	16,303	12.4
Hastings	12,870	137,452	10.7	14,734	236,481	16.1	17,352	277,976	16.0
Totals	61,031	687,347	11.3	68,689	1,142,845	16.6	79,229	1,180,012	14.9
Muskoka	1,334	15,755	11.8	1,191	18,079	15.2	1,565	23,510	15.0
Parry Sound	901	13,668	15.2	1,202	18,883	15.7	1,699	28,629	16.9
Algoma	4,272	88,644	20.8	5,533	87,587	15.8	6,622	129,875	19.6
Totals	6,507	118,067	18.1	7,926	124,549	15.7	9,886	182,014	18.4
The Province	484,821	5,633,117	11.6	577,465	9,518,553	16.5	626,104	9,713,879	15.5

BARLEY.

TABLE No. XII.—Showing by County Municipalities and groups of Counties the area and produce of Barley in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.
Essex	2,406	69,004	28.7	2,894	80,540	27.8	2,266	62,184	27.4
Kent	5,942	141,360	23.8	4,954	141,883	28.6	5,691	150,437	26.4
Elgin	4,206	87,653	20.8	4,047	119,467	29.5	4,384	117,164	26.7
Norfolk	6,374	123,337	19.4	5,806	136,209	23.5	6,050	157,306	26.0
Haldimand	13,176	227,550	17.3	14,347	345,045	24.1	14,810	326,500	22.0
Welland	3,638	70,468	19.4	3,503	74,894	21.4	4,105	96,337	23.5
Totals	35,742	719,372	20.1	35,551	898,038	25.3	37,306	909,928	24.4
Lambton	13,901	307,490	22.1	12,205	363,831	29.8	14,397	363,586	25.3
Huron	27,975	694,619	24.8	21,720	613,807	28.3	25,692	716,384	27.9
Bruce	19,056	423,805	22.2	19,757	524,548	26.6	18,402	489,626	26.6
Totals	60,932	1,425,914	23.4	53,682	1,502,186	28.0	58,491	1,569,596	26 8
Grey	23,734	514,316	21.7	25,271	616,360	24.4	24,230	609,582	25.2
Simcoe	34,316	793,729	23.1	28,741	807,047	28.1	28,180	751,865	26.7
Totals	58,050	1,308,045	22.5	54,012	1,423,407	26.4	52,410	1,361,447	26.0
Middlesex	13,884	311,905	22.5	11,749	342,013	29.1	14,728	383,262	26.0
Oxford	17,184	415,853	24.2	13,604	421,180	31.0	16,487	491,192	29.8
Brant	21,389	479,114	22.4	18,206	469,533	25.8	16,395	446,682	27.2
Perth	15,739	390,799	24.8	13,243	397,687	30.0	17,653	509,742	28.9
Wellington	35,489	840,734	23.7	33,145	931,706	28.1	33,436	925,886	27.7
Waterloo	15,422	391,102	25.4	14,734	418,446	28.4	15,046	451,566	30.0
Dufferin	13,140	318,645	24.3	13,039	348,011	26.7	11,045	282,499	25.6
Totals	132,247	3,148,152	23.8	117,720	3,328,576	28.3	124,790	3,490,829	28.0
Lincoln	3,545	62,888	17.7	3,152	70,006	22.2	4,134	104,151	25.2
Wentworth	13,630	295,635	21.7	12,883	314,088	24.4	11,899	329,404	27.7
Halton	13,299	331,943	25.0	13,944	330,333	23.7	12,386	341,974	27.6
Peel	37,705	891,346	23.6	33,636	852,000	25.3	32,061	892,977	27.9
York	62,396	1,548,045	24.8	57,859	1,720,727	29.7	53,790	1,542,819	28.7
Ontario	40,093	1,016,758	25.4	37,882	1,194,041	31.5	35,824	1,016,781	28.4
Durham	51,357	1,194,564	23.3	52,320	1,555.474	29.7	44,326	1,231,645	27.8
Northumberland	49,522	972,612	19.6	48,319	1,101,190	22.8	44,723	1,064,096	23.8
Prince Edward	38,668	684,037	17.7	34,748	684,883	19.7	40,267	818,919	20.3
Totals	310,215	6,997,828	22.6	294,743	7,822,742	26.5	279,410	7,342,766	26.3
Lennox and Addington	36,602	741,557	20.3	37,846	870,458	23.0	41,414	941,625	22.7
Frontenac	13,394	238,011	17.8	13,422	323,202	24.1	18,172	441,614	24.3
Leeds and Grenville	9,680	221,381	22.9	10,282	269,697	26.2	11,119	283,146	25.5
Dundas	4,729	118,225	25.0	5,117	152,487	29.8	7,127	216,462	30.4
Stormont	1,838	48,394	26.3	1,693	46,727	27.6	2,398	68,033	28.4
Glengarry	2,256	46,022	20.4	2,047	48,780	23.8	2,079	48,094	23.1
Prescott	3,331	86,273	25.9	2,702	90,517	33.5	2,300	59,546	25.9
Russell	1,802	42,041	23.3	1,345	32,509	24.2	1,340	33,329	24.9
Carleton	8,130	237,802	29.3	9,343	260,857	27.9	7,351	213,421	29.0
Renfrew	1,921	34,059	17.7	1,357	38,512	28.4	1,242	31,302	25.2
Lanark	3,057	61,843	20.2	2,763	74,905	27.1	2,489	67,691	27.2
Totals	86,740	1,875,608	21.6	87,917	2,208,651	25.1	97,031	2,404,263	24.8
Victoria	34,083	783,909	23.0	34,124	857,195	25.1	28,961	728,421	25.2
Peterborough	14,099	256,884	18.2	15,498	391,789	25.3	13,609	339,528	24.9
Haliburton	285	5,700	20.0	245	6,034	24.6	281	6,878	24.0
Hastings	33,406	577,258	17.3	39,881	1,018,162	25.5	40,420	968,706	24.0
Totals	81,873	1,623,751	19.8	89,748	2,273,180	25.3	83,271	2,043,533	24.5
Muskoka	589	13,064	22.2	668	13,834	20.7	558	12,201	21.9
Parry Sound	525	10,106	19.3	1,026	25,311	24.7	709	16,943	23.9
Algoma	433	12,990	30 0	711	16,353	23.0	564	14,907	26.4
Totals	1,547	36,160	23.4	2,405	55,498	23.1	1,831	44,051	24.1
The Province	767,346	17,134,830	22.3	735,778	19,512,278	26.5	734,540	19,166,413	26.1

OATS.

TABLE No. XIII.—Showing by County Municipalities and groups of Counties the area and produce of Oats in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	32,445	1,297,800	40.0	28,852	1,253,908	43.5	27,568	1,091,454	39.6
Kent	34,326	1,251,183	36.5	32,616	1,422,384	43.6	31,677	1,297,524	41.0
Elgin	33,131	1,065,162	32.2	30,410	1,288,168	42.4	31,293	1,208,268	38.6
Norfolk	28,135	598,150	21.3	24,213	790,797	32.7	26,052	873,719	33.5
Haldimand	22,780	577,929	25.4	21,241	711,998	33.5	21,183	708,800	33.5
Welland	21,160	556,296	26.3	17,157	587,113	34.2	18,583	595,218	32.0
Totals	171,977	5,346,520	31.1	154,489	6,054,368	39.2	156,356	5,774,983	36.9
Lambton	40,519	1,258,925	31.1	37,110	1,443,950	38.9	36,930	1,371,192	37.1
Huron	78,530	2,840,430	36.2	73,289	2,708,029	37.0	70,835	2,690,121	38.0
Bruce	61,746	1,835,091	29.7	59,023	2,026,260	34.3	54,700	1,883.203	34.4
Totals	180,795	5,934,446	32.8	169,422	6,178,239	36.5	162,465	5,944,516	36.6
Grey	90,888	2,602,123	28.6	87,139	2,872,101	33.0	79,253	2,625,874	33.1
Simcoe	66,934	1,910,966	28.6	68,014	2,584,532	38.0	58,781	2,047,962	34.8
Totals	157,822	4,513,089	28.6	155,153	5,456,633	35.2	138,034	4,673,836	33.9
Middlesex	72,309	2,350,042	32.5	68,745	2,700,304	39.3	67,274	2,614,524	38.9
Oxford	54,971	1,696,955	30.9	51,197	2,066,823	40.4	49,560	1,946,620	39.3
Brant	18,595	499,648	26.9	16,946	583,451	34.4	17,639	659,181	37.4
Perth	58,300	2,102,881	36.1	54.171	2,235,095	41.3	51,745	2,110,035	40.8
Wellington	77,013	2,389,713	31.0	69,930	2,587,410	37.0	64,236	2,358,399	36.7
Waterloo	36,396	1,193,789	32.8	34,184	1,198,833	35.1	32,935	1,264,152	38.4
Dufferin	31,944	1,034,347	32.4	29,152	1,065,214	36.5	26,536	924,034	34.8
Totals	349,528	11,267,375	32.2	324,325	12,437,130	38.3	309,925	11,876,945	38.3
Lincoln	18,451	426,772	23.1	16,277	509,796	31.3	17,422	589,643	33.8
Wentworth	28,861	744,902	25.8	27,797	978,176	35.2	27,673	1,044,670	37.8
Halton	18,729	579,850	31.0	18,144	583,692	32.2	17,682	647,059	36.6
Peel	28,882	893,320	30.9	27,143	922,862	34.0	26,549	1,001,506	37.7
York	66,076	2,192,402	33.2	62,423	2,554,349	40.9	59,003	2,380,411	40.3
Ontario	48,812	1,600,545	32.8	49,123	2,079,377	42.3	45,331	1,728,603	38.1
Durham	33,122	962,194	29.1	34,202	1,330,800	38.9	32,145	1,188,303	37.0
Northumberland	33,194	723,301	21.8	31,324	972,297	31.0	28,543	888,190	31.1
Prince Edward	13,747	271,916	19.8	15,482	468,950	30.3	13,527	374,145	27.7
Totals	289,874	8,395,202	29.0	281,915	10,400,299	36.9	267,875	9,842,530	36.7
Lennox and Addington	24,721	564,875	22.9	23,922	713,593	29.8	21,552	647,924	30.1
Frontenac	28,114	551,034	19.6	27,953	824,614	29.5	25,954	777,017	29.9
Leeds & Grenville	66,032	1,798,051	27.2	67,448	2,241,972	33.2	61,769	2,047,862	33.2
Dundas	29,716	841,854	28.3	31,351	1,254,040	40.0	28,168	1,044,798	37.1
Stormont	24,371	792,057	32.5	25,398	990,522	39.0	24,332	873,772	35.9
Glengarry	30,454	913,620	30.0	30,930	984,502	31.8	29,658	1,018,802	34.4
Prescott	27,632	889,198	32.2	27,039	1,015,585	37.6	25,326	809,147	31.9
Russell	19,261	561,843	29.2	20,091	680,683	33.9	17,813	593,136	33.3
Carleton	61,003	1,960,026	32.1	63,448	2,066,501	32.6	56,108	2,071,239	36.9
Renfrew	42,327	954,474	22.6	42.741	1,466,016	34.3	37,877	1,256,754	33.2
Lanark	40,619	965,920	23.8	40,430	1,280,418	31.7	34,634	1,157,387	33.4
Totals	394,250	10,792,952	27.4	400,751	13,518,446	33.7	363,191	12,297,838	33.9
Victoria	41,216	1,233,595	29.9	38,204	1,381,839	36.2	35,710	1,207,262	33.8
Peterborough	31,135	757,515	24.3	30,425	1,019,238	33.5	27,986	916,177	32.7
Haliburton	4,928	114,576	23.3	4,980	174,300	35.0	4,573	128,640	28.1
Hastings	42,510	912,690	21.5	45,107	1,494,846	33.1	40,608	1,239,308	30.5
Totals	119,789	3,018,376	25.2	118,716	4,070,223	34.3	108,877	3,491,387	32.1
Muskoka	9,326	242,756	26.0	9,225	277,765	30.1	7,997	240,542	30.1
Parry Sound	4,116	131,712	32.0	3,756	130,070	34.6	4,232	139,886	33.1
Algoma	4,986	205,673	41.3	4,149	142,435	34.3	3,670	136,714	37.3
Totals	18,428	580,141	31.5	17,130	550,270	32.1	15,899	517,142	32.5
The Province	1,682,463	49,848,101	29.6	1,621,901	58,665,608	36.2	1,522,622	54,419,177	35.7

RYE.

TABLE No. XIV.—Showing by County Municipalities and groups of Counties the area and produce of Rye in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	659	12,468	18.9	664	13,751	20.7	780	16,009	20.5
Kent	1,051	17,268	16.4	541	9,976	18.4	589	12,375	21.0
Elgin	1,033	15,753	15.3	958	16,669	17.4	1,152	19,400	16.8
Norfolk	7,236	78,438	10.8	5,967	82,703	13.9	7,071	102,201	14.5
Haldimand	187	2,338	12.5	273	4,300	15.8	947	16,116	17.0
Welland	509	7,238	14.2	502	10,442	20.8	672	11,670	17.4
Totals	10,675	133,503	12.5	8,905	137,841	15.5	11,211	177,771	15.9
Lambton	55	825	15.0	46	782	17.0	192	3,056	15.9
Huron	218	3,968	18.2	238	7,140	30.0	277	5,040	18.2
Bruce	346	5,422	15.7	300	4,500	15.0	380	6,036	15.9
Totals	619	10,215	16.5	584	12,422	21.3	849	14,132	16.6
Grey	470	9,165	19.5	140	2,800	20.0	562	9,814	17.5
Simcoe	1,419	22,505	15.9	1,085	16,926	15.6	2,226	42,113	18.9
Totals	1,889	31,670	16.8	1,225	19,726	16.1	2,788	51,927	18.6
Middlesex	535	7,758	14.5	178	3,427	19.3	441	7,522	17.1
Oxford	672	8,602	12.8	600	12,198	20.3	1,076	15,729	14.6
Brant	967	12,893	13.3	425	6,460	15.2	842	12,202	14.5
Perth	414	4,140	10.0	123	2,460	20.0	258	3,753	14.5
Wellington	683	10,245	15.0	348	6,473	18.6	818	14,404	17.6
Waterloo	341	5,968	17.5	322	5,690	17.7	550	9,763	17.8
Dufferin	688	9,632	14.0	586	14,650	25.0	898	15,855	17.7
Totals	4,300	59,238	13.8	2,582	51,358	19.9	4,883	79,228	16.2
Lincoln	65	910	14.0	293	5,066	17.3	501	7,905	15.8
Wentworth	666	9,191	13.8	244	3,782	15.5	925	16,122	17.4
Halton	245	3,756	15.3	212	3,286	15.5	501	8,458	16.9
Peel	123	1,476	12.0	423	8,460	20.0	1,499	30,349	20.2
York	610	9,913	16.3	615	9,489	15.4	1,882	29,456	15.7
Ontario	1,459	22,863	15.7	1,494	21,215	14.2	3,112	55,019	17.7
Durham	3,568	43,101	12.1	3,727	56,762	15.2	5,327	80,491	15.1
Northumberland	9,035	100,831	11.2	6,986	101,157	14.5	11,610	160,435	13.8
Prince Edward	6,249	74,113	11.9	7,880	107,877	13.7	9,193	126,738	13.8
Totals	22,020	266,154	12.1	21,874	317,094	14.5	34,550	514,973	14.9
Lennox and Addington	2,872	40,811	14.2	3,610	57,255	15.9	5,612	84,914	15.1
Frontenac	1,015	12,495	12.3	726	11,333	15.6	3,963	67,005	16.9
Leeds and Grenville	1,776	22,289	12.6	2,298	36,768	16.0	7,718	137,408	17.8
Dundas	693	8,316	12.0	945	20,223	21.4	1,589	37,411	23.5
Stormont	181	3,801	21.0	207	5,036	24.3	547	11,555	21.1
Glengarry	.....	.....	.....	22	330	15.0	66	1,157	17.5
Prescott	50	663	13.3	270	5,281	19.6	310	5,715	18.4
Russell	24	720	30.0	.....	.....	.....	268	5,237	19.5
Carleton	3,317	53,570	16.2	3,040	57,456	18.9	6,987	125,160	17.9
Renfrew	4,821	65,999	13.7	4,915	104,198	21.2	7,038	139,883	19.9
Lanark	1,283	18,450	14.4	2,140	35,524	16.6	5,465	106,538	19.5
Totals	16,032	227,114	14.2	18,173	333,404	18.3	39,563	721,983	18.2
Victoria	365	7,300	20.0	773	10,822	14.0	1,168	19,105	16.4
Peterborough	2,133	27,153	12.7	3,659	50,994	16.7	3,445	55,576	16.1
Haliburton	258	3,225	12.5	150	2,207	14.7	286	4,832	16.9
Hastings	9,583	121,129	12.6	9,794	157,977	16.1	15,517	242,616	15.6
Totals	12,339	158,807	12.9	13,776	222,000	16.1	20,416	322,129	15.8
Muskoka	248	4,216	17.0	341	6,138	18.0	423	8,434	19.9
Parry Sound	55	825	15.0	242	5,324	22.0	408	8,619	21.1
Algoma	185	3,145	17.0	77	1,155	15.0	115	1,996	17.4
Totals	488	8,186	16.8	660	12,617	19.1	946	19,049	20.1
The Province	68,362	894,887	13.1	67,779	1,106,462	16.3	115,206	1,901,192	16.5

PEASE.

TABLE No. XV.—Showing by County Municipalities and groups of Counties the area and produce of Pease in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	5,574	82,774	14.9	4,399	82,217	18.7	3,850	70,637	18.3
Kent	16,297	262,708	16.1	12,878	297,739	23.1	8,980	179,561	20.0
Elgin	17,862	200,054	11.2	15,758	371,731	23.6	11,368	207,405	18.2
Norfolk	20,196	192,468	9.5	16,769	366,403	21.9	13,650	253,636	18.6
Haldimand	14,120	156,308	11.1	17,880	395,506	22.1	12,693	228,572	18.0
Welland	5,412	75,227	13.9	4,071	75,354	18.5	3,898	64,696	16.6
Totals	79,461	969,539	12.2	71,755	1,588,950	22.1	54,439	1,004,507	18.5
Lambton	13,685	169,147	12.4	12,344	299,836	24.3	8,507	160,728	18.9
Huron	36,306	806,719	22.2	34,181	824,788	24.1	29,923	679,784	22.7
Bruce	39,263	883,025	22.5	39,887	947,715	23.8	35,786	835,470	23.3
Totals	89,254	1,858,891	20.8	86,412	2,072,339	24.0	74,216	1,675,982	22.6
Grey	46,286	943,309	20.4	46,570	1,065,056	22.9	43,923	966,022	22.0
Simcoe	32,068	566,321	17.7	34,241	810,484	23.7	30,554	671,560	22.0
Totals	78,354	1,509,630	19.3	80,811	1,875,540	23.2	74,477	1,637,582	22.0
Middlesex	27,294	466,454	17.1	25,567	596,478	23.3	19,560	379,397	19.4
Oxford	19,025	330,464	17.4	18,449	456,428	24.7	14,131	308,808	21.9
Brant	10,050	95,173	9.5	9,989	209,769	21.0	8,604	161,413	18.8
Perth	24,245	535,814	22.1	23,125	630,388	27,3	21,202	493,893	23.3
Wellington	40,801	861,309	21.1	38,298	970,088	25.3	36,240	831,378	22.9
Waterloo	15,736	243,436	15.5	15,467	366,104	23.7	13,407	297,737	22.2
Dufferin	11,872	251,568	21.2	10,454	254,137	24.3	10,990	228,818	20.8
Totals	149,023	2,784,218	18.7	141,349	3,483,392	24.6	124,134	2,701,444	21.8
Lincoln	5,723	64,842	11.3	5,210	104,669	20.1	4,457	79,780	17.9
Wentworth	12,436	175,348	14.1	11,121	246,886	22.2	9,788	195,183	19.9
Halton	11,734	136,466	11.6	10,757	248,272	23.1	10,162	215,062	21.2
Peel	14,981	221,569	14.8	13,698	299,575	21.9	12,674	260,081	20.5
York	29,657	570,897	19.3	29,672	694,622	23.4	26,337	578,929	22.0
Ontario	31,585	530,312	16.8	29,767	736,733	24.8	25,794	544,374	21.1
Durham	24,251	385,348	15.9	21,769	517,449	23.8	21,779	440,670	20.2
Northumberland	23,388	242,767	10.4	20,831	442,659	21.3	20,211	349,765	17.3
Prince Edward	22,979	252,769	11.0	17,619	364,889	20.7	11,002	191,132	17.4
Totals	176,734	2,580,318	14.6	160,444	3,655,754	22.8	142,204	2,854,976	20.1
Lennox and Addington	9,181	110,539	12.0	9,816	209,964	21.4	8,755	165,368	18.9
Frontenac	10,625	122,188	11.5	12,607	235,247	18.7	11,575	211,144	18.2
Leeds and Grenville	6,246	103,371	16.6	6,012	124,509	20.7	6,372	125,332	19.7
Dundas	1,761	35,220	20.0	1,400	32,620	23.3	1,777	39,320	22.1
Stormont	2,469	43,825	17.8	2,573	52,489	20.4	2,784	57,479	20.6
Glengarry	4,944	108,768	22.0	6,214	110,299	17.8	6,464	119,128	18.4
Prescott	7,090	123,721	17.5	7,758	160,048	20.6	10,313	161,731	15.7
Russell	3,155	59,314	18.8	3,714	64,735	17.4	4,306	85,648	19.9
Carleton	12,790	269,741	21.1	14,012	289,208	20.6	13,439	289,276	21.5
Renfrew	20,308	320,866	15.8	23,073	439,541	19.1	20,774	413,124	19.9
Lanark	11,755	183,966	15.7	12,466	258,171	20.7	11,369	254,257	22.4
Totals	90,324	1,481,519	16.4	99,645	1,976,831	19.8	97,928	1,921,807	19.6
Victoria	18,219	322,112	17.7	16,962	382,663	22.6	16,012	328,383	20.5
Peterborough	15,959	207,467	13.0	17,046	362,398	21.3	15,124	294,746	19.5
Haliburton	1,735	32,531	18.8	1,553	33,001	21.3	1,546	30,243	19.6
Hastings	19,769	220,622	11.2	20,472	460,211	22.5	17,955	316,078	17.6
Totals	55,682	782,732	14.1	56,033	1,238,273	22.1	50,637	969,450	19.1
Muskoka	2,816	54,011	19.2	2,744	62,879	22.9	2,635	54,450	20.7
Parry Sound	1,208	30,599	25.3	1,133	21,856	19.3	1,277	27,181	21.3
Algoma	3,900	121,875	31.3	3,607	67,920	18.8	3,260	85,071	26.1
Totals	7,924	206,485	26.1	7,487	152,655	20.4	7,172	166,702	23.2
The Province	726,756	12,173,332	16.8	703,936	16,043,734	22.8	625,207	12,932,450	20.7

CORN.

TABLE XVI.—Showing by County Municipalities and groups of Counties the area and produce of Corn in Ontario in the years 1886 and 1887, with the yearly average for the five years 1882-7 (1883 not included); also the yield per acre.

Counties.	1887.			1886.			Yearly average for the five years 1882-7.		
	Acres.	Bush. (in ear.)	Bush. per acre.	Acres.	Bush. (in ear.)	Bush. per acre.	Acres.	Bush. (in ear.)	Bush. per acre.
Essex	29,523	1,858,768	63.0	31,294	2,347,050	75.0	30,252	2,240,972	74.1
Kent	23,568	1,146,583	48.7	26,544	1,928,422	72.7	25,422	1,822,429	71.7
Elgin	13,805	722,692	52.4	13,177	1,032,154	78.3	14,291	1,033,031	72.3
Norfolk	13,758	435,716	31.7	13,141	952,723	72.5	13,723	858,777	62.6
Haldimand	1,214	73,775	60.8	1,121	81,485	72.7	1,639	102,787	62.7
Welland	5,267	323,025	61.3	4,996	342,376	68.5	6,134	368,838	60.1
Totals	87,135	4,560,559	52.3	90,273	6,684,210	74.0	91,461	6,426,834	70.3
Lambton	6,209	307,780	49.6	5,755	373,787	65.0	6,823	404,505	59.3
Huron	923	76,729	83.1	1,014	79,853	78.8	1,434	100,358	70.0
Bruce	416	20,800	50.0	441	30,870	70.0	385	21,920	56.9
Totals	7,548	405,309	53.7	7,210	484,510	67.2	8,642	526,783	61.0
Grey	436	17,440	40.0	371	22,260	60.0	326	16,818	51.6
Simcoe	757	20,187	26.7	763	43,873	57.5	684	34,262	50.1
Totals	1,193	37,627	31.5	1,134	66,133	58.3	1,010	51,080	50.6
Middlesex	9,130	457,048	50.1	9,696	649,050	66.9	10,048	679,378	67.6
Oxford	7,501	379,926	50.7	7,014	465,519	66.4	8,047	502,437	62.4
Brant	4,005	193,562	48.3	3,836	276,499	72.1	4,355	297,641	68.3
Perth	787	41,973	53.3	460	32,200	70.0	625	41,603	66.6
Wellington	490	24,500	50.0	284	17,040	60.0	481	28,490	59.2
Waterloo	777	27,972	36.0	726	55,662	76.7	1,301	84,875	65.2
Dufferin	98	3,920	40.0	32	1,920	60.0	55	2,979	54.2
Totals	22,788	1,128,901	49.5	22,048	1,497,890	67.9	24,912	1,637,403	65.7
Lincoln	6,036	320,089	53.0	5,262	338,768	64.4	5,888	369,557	62.8
Wentworth	4,210	229,782	54.6	3,118	208,657	66.9	4,352	313,721	72.1
Halton	930	24,800	26.7	818	32,720	40.0	965	50,613	52.4
Peel	395	15,800	40.0	359	22,438	62.5	352	20,162	57.3
York	1,121	58,853	52.5	903	58,695	55.0	1,202	77,838	64.8
Ontario	2,296	98,407	42.9	2,005	126,977	63.3	2,253	124,477	55.2
Durham	1,592	50,037	31.4	1,271	74,849	58.9	1,721	88,758	51.6
Northumberland	3,572	163,419	45.8	2,982	159,626	53.5	3,473	185,271	53.3
Prince Edward	4,939	191,386	38.8	2,699	121,455	45.0	5,474	230,793	42.2
Totals	25,091	1,152,573	45.9	19,417	1,144,185	58.9	25,680	1,461,190	56.9
Lennox and Addington	1,746	72,023	41.3	1,388	78,186	56.3	2,066	100,660	48.7
Frontenac	1,392	63,712	45.8	1,172	56,256	48.0	1,572	79,810	50.8
Leeds and Grenville	4,859	316,272	65.1	3,460	225,592	65.2	4,623	271,088	58.6
Dundas	1,283	117,613	91.7	1,325	86,125	65.0	1,374	94,019	68.4
Stormont	1,162	65,851	56.7	746	44,760	60.0	1,225	65,219	53.2
Glengarry	474	23,700	50.0	317	22,190	70.0	688	29,826	43.4
Prescott	960	56,726	59.1	1,337	72,198	54.0	1,326	64,475	48.6
Russell	373	10,258	27.5	234	15,989	68.3	403	18,102	44.9
Carleton	925	43,318	46.8	1,011	38,418	38.0	1,110	54,409	49.0
Renfrew	426	25,560	60.0	263	18,410	70.0	443	25,156	56.8
Lanark	958	50,228	52.4	928	43,616	47.0	1,204	57,255	47.6
Totals	14,558	845,261	58.1	12,181	701,740	57.6	16,034	860,019	53.6
Victoria	537	26,850	50.0	237	20,145	85.0	425	25,045	58.9
Peterborough	376	10,528	28.0	159	10,601	66.7	338	16,677	49.3
Haliburton	90	3,600	40.0	73	3,650	50.0	121	5,809	48.0
Hastings	4,338	221,238	51.0	3,560	183,945	51.7	4,995	238,996	47.8
Totals	5,341	262,216	49.1	4,029	218,341	54.2	5,879	286,527	48.7
Muskoka	169	9,506	56.3	160	6,200	38.8	202	7,747	38.4
Parry Sound	35	1,400	40.0	34	1,700	50.0	33	1,520	46.1
Algoma	35	1,400	40.0	8	400	50.0	54	2,498	46.3
Totals	239	12,306	51.5	202	8,300	41.1	289	11,765	40.7
The Province	163,893	8,404,752	51.3	156,494	10,805,309	69.0	173,907	11,261,601	64.8

BUCKWHEAT.

TABLE No. XVII.—Showing by County Municipalities and groups of Counties the area and produce of Buckwheat in Ontario in the years 1886 and 1887, with the yearly average for the five years 1882-7 (1883 not included); also the yield per acre.

Counties.	1887.			1886.			Yearly average for the five years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	487	10,310	21.2	660	17,932	27.2	586	15,150	25.9
Kent	919	15,807	17.2	875	18,813	21.5	857	19,771	23.1
Elgin	1,372	19,963	14.6	1,484	29,383	19.8	1,271	25,938	20.4
Norfolk	4,912	74,712	15.2	4,827	99,678	20.7	4,858	94,767	19.5
Haldimand	798	9,895	12.4	946	20,812	22.0	697	13,020	18.7
Welland	1,584	26,136	16.5	1,976	37,406	18.9	1,731	33,059	19.1
Totals	10,072	156,823	15.6	10,768	224,024	20.8	10,000	201,705	20.2
Lambton	311	8,008	25.8	312	4,265	13.7	410	9,457	23.1
Huron	243	6,075	25.0	501	8,016	16.0	278	5,265	18.9
Bruce	469	11,256	24.0	618	10,815	17.5	345	6,493	18.8
Totals	1,023	25,339	24.8	1,431	23,096	16.1	1,033	21,215	20.5
Grey	386	4,439	11.5	454	9,838	21.7	344	6,286	18.3
Simcoe	449	6,735	15.0	542	8,672	16.0	356	5,780	16.2
Totals	835	11,174	13.4	996	18,510	18.6	700	12,066	17.2
Middlesex	773	8,812	11.4	846	16,497	19.5	587	10,362	17.7
Oxford	622	6,220	10.0	572	13,345	23.3	646	13,064	20.2
Brant	731	7,676	10.5	574	13,122	22.9	708	14,137	20.0
Perth	117	1,170	10.0	193	3,860	20.0	130	2,724	21.0
Wellington	75	1,500	20.0	171	4,019	23.5	131	2,991	22.8
Waterloo	107	2,140	20.0	96	2,112	22.0	102	2,198	21.5
Dufferin	224	4,480	20.0	119	2,152	18.0	113	2,146	19.0
Totals	2,649	31,998	12.1	2,571	55,107	21.4	2,417	47,622	19.7
Lincoln	562	8,930	15.9	673	15,634	23.2	683	17,111	25.1
Wentworth	503	8,048	16.0	744	15,349	20.6	693	15,349	22.1
Halton	172	2,580	15.0	148	2,664	18.0	160	2,771	17.3
Peel	207	3,105	15.0	50	1,000	20.0	214	3,970	18.6
York	248	3,100	12.5	322	6,978	21.7	289	6,285	21.7
Ontario	405	7,561	18.7	504	15,120	30.0	371	8,446	22.8
Durham	1,208	23,471	19.4	1,390	30,066	21.6	955	19,847	20.8
Northumberland	6,501	128,395	19.8	7,707	174,872	22.7	4,969	107,207	21.6
Prince Edward	7,226	130,429	18.1	7,857	170,575	21.7	6,350	137,891	21.7
Totals	17,032	315,619	18.5	19,395	432,258	22.3	14,684	318,877	21.7
Lennox and Addington	2,802	43,151	15.4	4,548	105,059	23.1	2,768	67,351	24.3
Frontenac	1,981	34,093	17.2	1,698	39,411	23.2	1,578	37,012	23.5
Leeds and Grenville	4,515	81,089	18.0	5,071	122,110	24.1	5,303	125,643	23.7
Dundas	1,586	27,755	17.5	1,423	44,725	31.4	1,438	38,937	27.1
Stormont	1,998	44,955	22.5	1,903	66,605	35.0	2,142	57,647	26.9
Glengarry	713	11,408	16.0	688	15,480	22.5	926	23,837	25.7
Prescott	1,373	13,730	10.0	1,507	40,900	27.1	1,670	35,148	21.0
Russell	998	13,307	13.3	1,228	39,296	32.0	1,034	24,052	23.3
Carleton	4,390	41,310	9.4	3,912	106,054	27.1	3,946	83,736	21.2
Renfrew	1,266	19,357	15.3	1,312	40,672	31.0	1,153	27,421	23.8
Lanark	4,739	54,783	11.6	5,699	136,776	24.0	6,148	147,192	23.9
Totals	26,361	384,938	14.6	28,989	757,088	26.1	28,106	667,976	23.8
Victoria	373	3,357	9.0	370	5,550	15.0	410	6,371	15.5
Peterborough	997	11,366	11.4	850	20,400	24.0	751	15,242	20.3
Haliburton	143	1,716	12.0	185	4,163	22.5	251	3,588	14.3
Hastings	4,274	71,233	16.7	4,916	128,996	26.2	3,704	89,245	24.1
Totals	5,787	87,672	15.1	6,321	159,109	25.2	5,116	114,446	22.4
Muskoka	274	9,590	35.0	241	7,953	33.0	293	8,533	29.1
Parry Sound	21	420	20.0	65	1,300	20.0	116	2,760	23.8
Algoma	89	1,780	20.0	15	263	17.5	51	1,256	24.6
Totals	384	11,790	30.7	321	9,516	29.6	460	12,549	27.3
The Province	64,143	1,025,353	16.0	70,792	1,678,708	23.7	62,516	1,396,456	22.3

BEANS.

TABLE No. XVIII.—Showing by County Municipalities and groups of Counties the area and produce of Beans in Ontario in the years 1886 and 1887, with the yearly average for the five years 1882-7 (1883 not included); also the yield per acre.

Counties.	1887.			1886.			Yearly average for the five years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	341	5,286	15.5	483	12,075	25.0	458	11,560	25.2
Kent	12,605	152,521	12.1	12,069	267,932	22.2	11,184	211,018	18.9
Elgin	946	12,676	13.4	883	23,550	26.7	1,068	23,370	21.9
Norfolk	298	3,874	13.0	350	6,139	17.5	691	12,713	18.4
Haldimand	55	825	15.0	35	525	15.0	128	2,700	21.1
Welland	289	3,000	10.4	479	9,523	19.9	707	11,248	15.9
Totals	14,534	178,182	12.3	14,299	319,744	22.4	14,236	272,609	19.1
Lambton	375	5,085	13.6	359	7,259	20.2	371	7,406	20.0
Huron	48	1,120	23.3	182	5,460	30.0	109	2,972	27.3
Bruce	126	2,520	20.0	162	1,944	12.0	108	1,867	17.3
Totals	549	8,725	15.9	703	14,663	20.9	588	12,245	20.8
Grey	106	1,484	14.0	96	2,176	22.7	113	1,830	16.2
Simcoe	60	1,875	31.3	106	2,650	25.0	96	2,020	21.0
Totals	166	3,359	20.2	202	4,826	23.9	209	3,850	18 4
Middlesex	165	2,035	12.3	228	4,332	19.0	330	6,107	18.5
Oxford	134	3,350	25.0	126	3,150	25.0	220	6,368	28.9
Brant	120	1,230	10.3	209	4,347	20.8	558	10,093	18.1
Perth	74	1,332	18.0	30	900	30.0	60	1,454	24.2
Wellington	42	756	18.0	55	1,100	20.0	33	641	19.4
Waterloo	28	560	20.0	62	1,240	20.0	35	729	20.8
Dufferin	27	729	27.0	33	660	20.0	17	378	22.2
Totals	590	9,992	16.9	743	15,729	21.2	1,253	25,770	20.6
Lincoln	99	1,208	12.2	125	2,813	22.5	147	2,976	20.2
Wentworth	109	1,908	17.5	66	1,980	30.0	128	2,576	20.1
Halton	35	642	18.3	81	1,620	20.0	42	807	19.2
Peel	43	860	20.0	40	800	20.0	60	1,574	26.2
York	91	2,093	23.0	65	2,059	31.7	136	3,831	28.2
Ontario	64	1,446	22.6	117	3,510	30.0	295	6,875	23.3
Durham	286	4,035	14.1	235	4,794	20 4	31	6,353	20.5
Northumberland	284	6,026	21.2	345	10,902	31.6	504	11,173	22.2
Prince Edward	435	4,829	11.1	832	15,533	18.7	482	10,160	21.1
Totals	1,446	23,047	15.9	1,906	44,011	23.1	2,104	46,325	22.0
Lennox and Addington	211	3,412	16.2	221	3,536	16.0	181	3,326	18.4
Frontenac	217	4,883	22.5	401	11,160	27.8	334	9,349	28.0
Leeds and Grenville	326	7,873	24 2	314	9,106	29.0	369	8,281	22.4
Dundas	296	5,920	20.0	194	5,626	29.0	195	4,850	24.9
Stormont	121	2,420	20.0	74	1,665	22.5	141	4,009	28.4
Glengarry	72	1,440	20.0	100	3,000	30.0	91	2,610	28.7
Prescott	290	5,055	17.4	345	8,798	25.5	497	14,884	29.9
Russell	132	1,804	13.7	158	2,370	15.0	238	5,356	22.5
Carleton	342	4,388	12.8	428	10,028	23.4	459	10,529	22.9
Renfrew	346	5,536	16.0	419	13,127	31.3	455	11,130	24.5
Lanark	218	4,033	18.5	108	3,060	28.3	213	5,021	23.6
Totals	2,571	46,764	18.2	2,762	71,476	25.9	3,173	79,345	25.0
Victoria	88	1,408	16.0	57	1,140	20.0	87	1,590	18.3
Peterborough	51	765	15.0	90	2,100	23.3	152	2,355	15.5
Haliburton	30	300	10.0	14	350	25.0	26	478	18.4
Hastings	224	3,002	13.4	253	6,768	26.8	252	5,520	21.9
Totals	393	5,475	13.9	414	10,358	25.0	517	9,943	19.2
Muskoka	22	363	16.5	27	945	35.0	35	819	23.4
Parry Sound	2	38	19.0	7	140	20.0	13	305	23.5
Algoma	2	30	15.0	9	180	20.0	5	102	20.4
Totals	26	431	16.6	43	1,265	29.4	53	1,226	23.1
The Province	20,275	275,975	13.6	21,072	482,072	22.9	22,133	451,313	20.4

HAY AND CLOVER.

TABLE No. XIX.—Showing by County Municipalities and groups of Counties the area and produce of Hay and Clover in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.	Acres.	Tons.	Tons per acre.
Essex	35,483	51,450	1.45	36,290	51,895	1.43	34,706	53,600	1.54
Kent	47,890	71,835	1.50	51,843	64,804	1.25	49,814	75,083	1.51
Elgin	49,728	65,641	1.32	47,601	64,261	1.35	48,513	70,736	1.46
Norfolk	40,773	45,258	1.11	38,754	54,256	1.40	40,750	56,408	1.38
Haldimand	50,710	64,402	1.27	49,330	69,555	1.41	49,488	68,586	1.39
Welland	46,195	59,130	1.28	48,720	62,362	1.28	45,420	63,885	1.41
Totals	270,779	357,716	1.32	272,538	367,133	1.35	268,691	388,298	1.45
Lambton	49,834	79,734	1.60	55,639	63,985	1.15	51,669	76,338	1.48
Huron	97,148	150,579	1.55	93,660	119,885	1.28	90,887	130,042	1.43
Bruce	88,775	133,163	1.50	82,250	91,298	1.11	78,734	100,966	1.28
Totals	235,757	363,476	1.54	231,549	275,168	1.19	221,290	307,346	1.39
Grey	117,549	153,989	1.31	114,036	114,036	1.00	110,810	134,044	1.21
Simcoe	74,631	108,215	1.45	71,988	88,545	1.23	72,322	100,230	1.39
Totals	192,180	262,204	1.36	186,024	202,581	1.09	183,132	234,274	1.28
Middlesex	82,900	108,599	1.31	89,057	120,227	1.35	87,306	133,102	1.52
Oxford	60,122	78,760	1.31	60,767	88,112	1.45	61,917	93,832	1.52
Brant	32,372	38,523	1.19	32,276	41,959	1.30	32,652	48,080	1.47
Perth	68,590	104,943	1.53	65,953	81,781	1.24	65,715	100,130	1.52
Wellington	84,159	138,021	1.64	83,774	118,122	1.41	80,415	127,802	1.59
Waterloo	41,286	58,213	1.46	43,138	68,158	1.58	42,367	67,815	1.60
Dufferin	32,700	49,050	1.50	32,987	31,668	.96	32,109	44,563	1.39
Totals	402,129	576,109	1.43	407,952	550,027	1.35	402,481	615,324	1.53
Lincoln	42,930	54,521	1.27	44,221	62,794	1.42	40,746	55,899	1.37
Wentworth	44,943	52,124	1.16	45,918	51,020	1.11	45,130	66,341	1.47
Halton	33,925	37,318	1.10	34,286	42,858	1.25	34,173	49,659	1.45
Peel	39,198	51,741	1.32	38,717	61,560	1.59	37,819	58,602	1.55
York	72,438	105,036	1.45	73,740	92,175	1.25	71,921	104,420	1.45
Ontario	53,566	73,921	1.38	53,531	77,085	1.44	51,894	77,151	1.49
Durham	41,610	57,838	1.39	44,864	65,501	1.46	43,721	63,377	1.45
Northumberland	52,841	58,654	1.11	56,344	81,135	1.44	52,481	69,225	1.32
Prince Edward	27,111	30,907	1.14	35,997	53,996	1.50	29,720	41,245	1.39
Totals	408,562	522,060	1.28	427,618	588,124	1.38	407,605	585,919	1.44
Lennox and Addington	52,432	39,324	.75	49,821	79,215	1.59	44,258	56,564	1.28
Frontenac	62,123	44,729	.72	64,473	78,012	1.21	60,291	74,236	1.23
Leeds & Grenville	114,820	129,747	1.13	121,956	152,445	1.25	107,913	147,562	1.37
Dundas	34,905	55,848	1.60	34,903	54,100	1.55	33,400	52,777	1.58
Stormont	31,781	47,672	1.50	32,460	48,690	1.50	30,492	46,964	1.54
Glengarry	35,595	68,342	1.92	33,611	54,786	1.63	33,418	54,587	1.63
Prescott	35,009	55,664	1.59	31,473	45,951	1.46	29,477	42,435	1.44
Russell	19,121	33,462	1.75	16,757	21,617	1.29	17,686	24,325	1.38
Carleton	62,209	110,732	1.78	60,410	85,782	1.42	56,809	80,074	1.41
Renfrew	65,443	88,348	1–35	59,895	76,666	1.28	59,557	69,295	1.16
Lanark	62,056	104,875	1.69	63,269	92,373	1.46	58,246	86,349	1.48
Totals	575,494	778,743	1.35	569,028	789,637	1.39	531,547	735,168	1.38
Victoria	40,385	47,250	1.17	38,159	43,120	1.13	37,362	45,759	1.22
Peterborough	37,714	34,697	.92	38,111	50,688	1.33	37,594	44,459	1.18
Haliburton	9,767	13,478	1.38	10,666	9,813	.92	9,590	10,532	1.10
Hastings	66,237	81,472	1.23	73,361	81,431	1.11	65,322	86,224	1.32
Totals	154,103	176,897	1.15	160,297	185,052	1.15	149,868	186,974	1.25
Muskoka	23,100	35,112	1.52	22,700	22,473	.99	19,757	24,039	1.22
Parry Sound	7,651	10,405	1.36	8,470	6,353	.75	8,771	9,837	1.12
Algoma	10,888	10,888	1.00	8,975	7,898	.88	9,210	11,368	1.23
Totals	41,639	56,405	1.35	40,145	36,724	.91	37,738	45,244	1.20
The Province	2,280,643	3,093,610	1.36	2,295,151	2,994,446	1.35	2,202,352	3,098,547	1.41

POTATOES.

TABLE No. XX.—Showing by County Municipalities and groups of Counties the area and produce of Potatoes in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	2,697	128,512	47.7	2,669	240,610	90.2	2,841	300,984	105.9
Kent	2,910	149,516	51.4	3,288	387,294	117.8	3,522	458,624	130.2
Elgin	2,794	143,081	51.2	2,445	281,786	115.3	2,925	278,482	95.2
Norfolk	3,093	102,502	33.1	2,778	241,464	86.9	3,627	384,144	105.9
Haldimand	1,153	56,739	49.2	1,213	152,341	125.6	1,543	172,369	111.7
Welland	2,233	110,065	49.3	1,800	167,058	92.8	2,474	237,670	96.1
Totals	14,880	690,415	46.4	14,193	1,470,553	103.6	16,932	1,832,273	108.2
Lambton	2,649	160,980	60.8	2,474	245,495	99.2	3,034	310,338	102.3
Huron	4,628	381,532	82.4	4,688	433,968	92.6	5,156	630,839	122.4
Bruce	4,292	306,792	71.5	4,465	363,898	81.5	4,808	528,278	109.9
Totals	11,569	849,304	73.4	11,627	1,043,361	89.7	12,998	1,469,455	113.1
Grey	6,025	575,388	95.5	6,376	653,221	102.5	7,006	853,436	121.8
Simcoe	6,111	387,926	63.5	6,303	746,653	118 5	6,715	829,160	123.5
Totals	12,136	963,314	79.4	12,679	1,399,874	110.4	13,721	1,682,596	122.6
Middlesex	4,890	305,576	62.5	5,224	590,730	113.1	5,789	601,448	103.9
Oxford	2,836	171,578	60.5	2,665	286,754	107.3	3,389	349,136	103.0
Brant	2,047	121,449	59.3	1,873	222,419	118.8	2,234	250,898	112.3
Perth	3,421	293,693	85.9	3,194	308,221	96.5	3,889	430,025	110.6
Wellington	5,303	448,104	84.5	5,053	576,143	114.0	5,917	699,905	118.3
Waterloo	2,715	210,331	77.5	2,637	238,332	90.4	2,947	350,436	118.9
Dufferin	2,839	309,792	109.1	2,504	287,008	114.6	3,056	417,290	136.5
Totals	24,051	1,860,523	77.4	23,150	2,509,607	108.4	27,221	3,099,138	113.9
Lincoln	1,831	116,928	63.9	1,751	193,118	110.3	1,964	187,320	95.4
Wentworth	2,928	218,692	74.7	3,028	324,753	107.3	3,585	437,441	122.0
Halton	1,450	60,639	41.8	1,390	125,726	90.5	1,656	183,512	110.8
Peel	2,725	142,576	52.1	2,373	248,168	104.6	2,829	301,168	106.5
York	6,408	467,528	73.0	6,388	652,854	102.2	7,519	700,631	93.2
Ontario	3,801	316,053	83.2	3,443	446,833	129.8	3,949	465,688	117.9
Durham	3,117	207,592	66.6	2,891	421,826	145.9	3,171	401,977	126.8
Northumberland	4,425	272,359	61.6	3,708	352,260	95.0	4,221	450,337	106.7
Prince Edward	2,201	123,344	56.0	2,713	272,277	100.4	2,440	224,434	92.0
Totals	28,896	1,925,711	66.6	27,685	3,037,815	109.7	31,334	3,352,508	107.0
Lennox and Addington	3,276	225,225	68.8	3,086	360,507	116.8	3,420	397,649	116.3
Frontenac	3,260	223,351	71.6	3,493	464,814	133.1	3,979	408,867	102.8
Leeds and Grenville	6,612	653,199	98.8	6,379	780,917	122.4	7,257	906,767	125.0
Dundas	2,129	252,819	118.8	2,321	247,187	106.5	2,449	377,791	154.3
Stormont	1,838	238,940	130.0	2,045	224,950	110.0	2,097	274,524	130.9
Glengarry	2,239	268,680	120.0	2,443	210,098	86.0	2,532	307,403	121.4
Prescott	2,369	250,474	105.7	2,519	333.012	132.2	2,447	297,222	121.5
Russell	1,407	115,205	81.9	1,534	116,016	75.6	1,561	161,743	103.6
Carleton	4,762	463,485	97.3	5,828	616,078	105.7	5,957	785,990	131.9
Renfrew	3,772	301,760	80.0	4,038	663,888	164.4	3,799	578,745	152.3
Lanark	3,354	279,221	83.3	3,456	438,048	126.8	3,649	532,214	145.9
Totals	35,018	3,272,359	93.4	37,142	4,455,515	120.0	39,147	5,028,915	128.5
Victoria	3,057	245,080	80.2	2,692	365,654	135.8	2,921	367,314	125.7
Peterborough	2,541	162,268	63.9	2,477	345,467	139.5	2,544	308,529	121.3
Haliburton	649	44,619	68.8	543	105,282	193.9	694	96,812	139.5
Hastings	4,716	312,671	66.3	5,425	808,813	149.1	5,900	717,058	121.5
Totals	10,963	764,638	69.7	11,137	1,625,216	145.9	12,059	1,489,713	123.5
Muskoka	1,417	124,965	88.2	1,270	247,320	194.7	1,303	175,354	134.6
Parry Sound	625	95,731	153.2	593	117,491	198.1	684	112,413	164.3
Algoma	728	131,040	180.0	667	105,606	158.3	676	117,750	174.2
Totals	2,770	351,736	127.0	2,530	470,417	185.9	2,663	405,517	152.3
The Province	140,283	10,678,000	76.1	140,143	16,012,358	114.3	156,075	18,360,115	117.6

MANGEL-WURZELS.

TABLE No. XXI.—Showing by County Municipalities and groups of Counties the area and produce of Mangel-wurzels in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	210	61,091	290.9	213	106,500	500.0	193	79,358	411.2
Kent	302	74,821	247.8	259	142,996	552.1	262	106,264	405.6
Elgin	258	73,100	283.3	258	135,450	525.0	258	98,808	383.0
Norfolk	212	46,574	219.7	235	114,823	488.6	176	66,373	377.1
Haldimand	197	48,643	246.9	127	40,217	316.7	126	38,801	307.9
Welland	145	36,431	251.3	110	73,334	666.7	130	49,802	383.1
Totals	1,324	340,660	257.3	1,202	613,320	510.2	1,145	439,406	383.8
Lambton	319	110,454	346.3	290	135,679	467.9	338	125,839	372.3
Huron	1,532	575,955	376.0	1,549	834,586	538.8	1,398	643,248	460.1
Bruce	359	90,716	252.7	335	163,085	486.8	413	179,413	434.4
Totals	2,210	777,125	351.6	2,174	1,133,350	521.3	2,149	948,500	441.4
Grey	314	113,225	360.6	346	164,783	476.3	354	167,415	472.9
Simcoe	682	151,956	222.8	637	345,573	542.5	692	278,182	402.0
Totals	996	265,181	266.2	983	510,356	519.2	1,046	445,597	426.0
Middlesex	1,389	400,365	288.2	1,424	757,767	532.1	1,222	507,366	415.2
Oxford	1,336	569,310	426.1	1,186	622,911	525.?	1,061	511,905	482.5
Brant	362	104,075	287.5	390	196,775	504.6	344	170,757	496.4
Perth	1,522	693,332	455.5	1,457	864,831	593.6	1,402	679,121	484.4
Wellington	756	262,566	347.3	945	474,683	502.3	817	376,604	461.0
Waterloo	469	145,390	310.0	383	174,744	456.3	446	209,292	469.3
Dufferin	113	41,358	366.0	84	44,800	533.3	132	52,940	401.1
Totals	5,947	2,216,396	372.7	5,869	3,136,511	534.4	5,424	2,507,985	462.4
Lincoln	217	65,033	299.7	233	90,446	388.2	222	78,310	352.8
Wentworth	388	134,182	345.8	312	204,001	653.9	419	214,857	512.8
Halton	372	159,264	428.1	488	210,450	431.3	400	170,448	426.1
Peel	432	123,841	286.7	400	140,000	350.0	402	153,217	381.1
York	1,466	414,937	283.0	1,893	866,048	457.5	1,668	782,697	469.2
Ontario	493	162,399	329.4	698	290,836	416.7	758	307,411	405.6
Durham	434	128,390	295.8	439	187,795	427.8	438	187,689	428.5
Northumberland	433	113,736	262.7	486	201,029	413.6	442	186,858	422.8
Prince Edward	108	26,136	242.0	151	80,533	533.3	126	33,778	268.1
Totals	4,343	1,327,918	305.8	5,100	2,271,138	445.3	4,875	2,115,265	433.9
Lennox and Addington	325	106,785	328.6	130	39,558	304.3	142	46,730	329.1
Frontenac	135	35,412	262.3	286	112,793	394.4	161	60,811	377.7
Leeds and Grenville	175	46,053	263.2	167	73,323	439.1	191	84,323	441.5
Dundas	61	18,300	300.0	209	78,375	375.0	112	45,718	408.2
Stormont	5	1,000	200.0	43	14,333	333.3	33	13,404	406.2
Glengarry	123	36,900	300.0	44	13,200	300.0	66	20,900	316.7
Prescott	101	28,886	286.0	26	12,838	493.8	57	19,196	336.8
Russell	28	12,133	433.3	80	21,334	266.7	53	16,126	304.3
Carleton	498	94,087	188.9	566	210,450	371.8	536	201,435	375.8
Renfrew	102	16,065	157.5	113	52,734	466.7	110	39,472	358.8
Lanark	104	19,326	185.8	106	43,283	408.3	147	58,126	395.4
Totals	1,657	414,947	250.4	1,770	672,221	379.8	1,608	606,241	377.0
Victoria	561	168,300	300.0	477	230,548	483.3	445	200,375	450.3
Peterborough	298	60,828	204.1	239	97,194	406.7	281	101,213	360.2
Haliburton	8	2,000	250.0	18	7,200	400.0	7	2,543	363.3
Hastings	386	79,956	207.1	253	89,605	354.2	244	69,887	286.4
Totals	1,253	311,084	248.3	987	424,547	430.1	977	374,018	382.8
Muskoka	168	36,750	218.8	54	15,750	291.1	56	14,066	251.2
Parry Sound	5	1,500	300.0	3	750	250.0	11	2,389	217.2
Algoma	21	4,200	200.0	28	9,800	350.0	22	7,008	318.5
Totals	194	42,450	218.8	85	26,300	309.4	89	23,463	263.6
The Province	17,924	5,695,761	317.8	18,170	8,787,743	483.6	17,313	7,460,475	430.9

CARROTS.

TABLE No. XXII.—Showing by County Municipalities and groups of Counties the area and produce of Carrots in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	100	20,300	203.0	87	23,200	266.7	76	21,411	281.7
Kent	148	31,287	211.4	171	56,804	332.2	137	39,735	290.0
Elgin	167	37,954	227.3	104	44,497	427.9	135	37,757	279.7
Norfolk	145	18,463	127.3	108	37,516	347.4	115	32,261	280.5
Haldimand	85	16,188	190.5	91	21,840	240.0	73	17,459	239.2
Welland	103	15.321	148.8	52	24,440	470.0	74	19,421	262.4
Totals	748	139,513	186.5	613	208,297	339.8	610	168,044	275.5
Lambton	167	42,346	253.6	158	55,893	353.8	165	47,727	289.3
Huron	384	107,685	280.4	457	182,206	398.7	511	207,812	406.7
Bruce	305	64,965	213.0	241	84,391	350.2	299	102,080	341.4
Totals	856	214,996	251.2	856	322,490	376.7	975	357,619	366.8
Grey	444	105,583	237.8	540	212,760	394.0	560	216,148	386.0
Simcoe	525	90,400	172.2	556	237,846	427.8	600	218,346	363.9
Totals	969	195,983	202.3	1,096	450,606	411.1	1,160	434,494	374.6
Middlesex	428	94,515	220.8	476	177,353	372.6	467	144,964	310.4
Oxford	248	75,824	305.7	279	120,511	431.9	320	133,152	416.1
Brant	161	40,538	251.8	152	68,262	449.1	213	91,241	428.4
Perth	410	139,728	340.8	350	165,340	472.4	426	176,032	413.2
Wellington	382	95,286	249.4	254	79,586	313.3	302	102,260	338.6
Waterloo	220	47,575	216.3	319	156,310	490.0	297	131,538	442.9
Dufferin	124	44,020	355.0	123	49,200	400.0	157	56,472	359.7
Totals	1,973	537,486	272.4	1,953	816,562	418.1	2,182	835,659	383.0
Lincoln	99	22,058	222.8	97	32,980	340.0	106	32,155	303.3
Wentworth	219	52,926	241.7	142	67,450	475.0	213	84,137	395.0
Halton	79	26,239	332.1	164	67,240	440.0	116	45,090	388.7
Peel	278	74,713	268.8	269	78,459	291.7	306	107,721	352.0
York	472	116,070	245.9	580	228,131	393.3	716	305,112	426.1
Ontario	386	106,250	275.3	508	193,431	380.0	532	191,982	360.9
Durham	446	95,194	213.4	418	168,922	404.1	478	177,978	372.3
Northumberland	169	35,248	208.6	238	86,503	363.5	234	78,409	335.1
Prince Edward	27	1,665	61.7	31	7,750	250.0	39	6,170	158.2
Totals	2,175	530,363	243.8	2,447	930,866	380.4	2,740	1,028,754	375.5
Lennox and Addington	78	15,990	205.0	59	16,891	286.3	57	14,690	257.7
Frontenac	148	28,332	191.4	226	64,598	285.8	141	37,011	262.5
Leeds and Grenville	160	43,859	274.1	158	47,307	299.4	146	45,733	313.2
Dundas	45	11,250	250.0	57	17,100	300.0	43	14,767	343.4
Stormont	34	3,400	100.0	14	5,600	400.0	31	9,596	309.5
Glengarry	52	14,300	275.0	43	8,600	200.0	38	9,508	250.2
Prescott	81	16,740	206.7	45	18,900	420.0	51	13,662	267.9
Russell	131	42,575	325.0	97	27,483	283.3	109	34,552	317.0
Carleton	490	87,676	178.9	526	163,938	311.7	526	181,196	344.5
Renfrew	98	17,314	176.7	104	39,000	375.0	111	35,362	318.6
Lanark	118	16,857	142.9	142	43,783	308.3	138	48,015	347.9
Totals	1,435	298,293	207.9	1,471	453,200	308.1	1,391	444,092	319.3
Victoria	336	84,981	252.9	274	113,252	413.3	278	96,944	348.7
Peterborough	269	39,782	147.9	272	92,480	340.0	319	96,850	303.6
Haliburton	27	6,750	250.0	25	12,500	500.0	18	5,857	325.4
Hastings	175	26,000	148.6	139	46,148	332.0	137	39,324	287.0
Totals	807	157,513	195.2	710	264,380	372.4	752	238,975	317.8
Muskoka	91	16,699	183.5	76	17,100	225.0	73	17,895	245.1
Parry Sound	28	9,240	330.0	20	9,000	450.0	26	7,282	280.1
Algoma	28	5,600	200.0	25	6,250	250.0	27	6,914	256.1
Totals	147	31,539	214.6	121	32,350	267.3	126	32,091	254.7
The Province	9,110	2,105,686	231.1	9,267	3,478,751	375.4	9,936	3,539,728	356.3

TURNIPS.

TABLE No. XXIII.—Showing by County Municipalities and groups of Counties the area and produce of Turnips in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the yield per acre.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.	Acres.	Bush.	Bush. per acre.
Essex	146	28,591	195.8	152	51,490	338.8	205	63,563	310.1
Kent	258	61,306	237.6	266	89,315	335.8	353	122,693	347.6
Elgin	315	83,790	266.0	240	96,343	401.4	334	110,267	330.1
Norfolk	1,149	319,698	278.2	838	394,078	470.3	735	282,932	384.9
Haldimand	82	12,710	155.0	70	18,500	264.3	73	18,021	246.9
Welland	210	44,100	210.0	163	73,350	450.0	159	54,757	344.4
Totals	2,160	550,195	254.7	1,729	723,076	418.2	1,859	652,233	350.9
Lambton	227	45,400	200.0	219	91,980	420.0	274	88,001	321.2
Huron	6,583	2,193,521	333.2	5,738	2,835,146	494.1	6,647	2,540,709	382.2
Bruce	5,800	1,643,604	283.4	5,269	2,537,919	481.7	5,441	2,164,387	397.8
Totals	12,610	3,882,525	307.9	11,226	5,465,045	486.8	12,362	4,793,097	387.7
Grey	9,835	2,960,532	301.0	8,323	3,999,784	480.6	8,725	3,591,321	411.6
Simcoe	3,165	640,628	202.4	3,857	1,836,279	476.1	3,149	1,226,229	389.4
Totals	13,000	3,601,160	277.0	12,180	5,836,063	479.2	11,874	4,817,550	405.7
Middlesex	1,644	459,219	279.3	1,546	700,694	453.2	1,600	577,734	361.1
Oxford	5,105	2,129,755	417.2	4,969	2,521,768	507.5	4,986	2,098,123	420.8
Brant	2,926	999,726	341.7	2,427	1,234,736	508.8	2,336	1,086,528	465.1
Perth	4,637	1,523,023	328.5	4,095	2,221,538	542.5	4,839	1,821,518	376.4
Wellington	12,791	4,132,644	323.1	12,243	6,833,553	558.2	12,820	5,430,246	423.6
Waterloo	5,234	1,731,250	330.8	4,881	2,391,690	490.0	5,128	2,021,350	394.2
Dufferin	2,349	770,895	328.2	2,002	871,711	435,4	2,291	854,262	372.9
Totals	34,686	11,746,512	338.7	32,163	16,775,690	521.6	34,000	13,889,761	408.5
Lincoln	247	57,015	230.8	216	81,197	375.9	212	65,115	307.1
Wentworth	2,722	805,249	295.8	2,390	1,441,959	605.3	2,117	981,398	463.6
Halton	1,835	626,964	341.7	1,824	861,329	472.2	1,601	690,087	431.0
Peel	1,493	345,525	231.4	1,261	483,379	383.3	1,227	427,459	348.4
York	3,344	937,724	280.4	2,824	1,259,024	445.8	2,850	1,086,384	381.2
Ontario	12,651	3,771,010	298.1	11,646	5,283,091	453.6	11,193	4,147,868	370.6
Durham	5,148	1,450,500	281.8	5,951	2,540,006	426.8	4,995	2,099,565	420.3
Northumberland	3,493	864,518	247.5	3,410	1,459,275	427.9	2,926	1,056,607	361.1
Prince Edward	104	18,330	176.3	106	39,220	370.0	99	19,544	197.4
Totals	31,037	8,876,835	286.0	29,628	13,448,480	453.9	27,220	10,574,027	388.5
Lennox and Addington	161	35,554	220.8	95	25,531	268.8	177	42,274	238.8
Frontenac	276	53,994	195.6	558	183,554	329.0	344	99,927	290.5
Leeds and Grenville	242	62,516	258.3	195	68,576	351.7	212	77,814	367.0
Dundas	30	5,250	175.0	42	14,000	333.3	58	16,418	283.1
Stormont	47	10,575	225.0	95	33,250	350.0	91	21,759	239.1
Glengarry	81	28,350	350.0	65	29,250	450.0	38	13,285	349.6
Prescott	171	37,375	218.6	135	69,694	516.3	111	42,006	378.4
Russell	288	148,800	516.7	216	73,801	341.7	254	91,676	360.9
Carleton	1,264	223,311	176.7	1,534	617,435	402.5	1,337	456,100	341.1
Renfrew	538	102,220	190.0	614	226,063	368.2	572	181,327	317.0
Lanark	566	96,735	170.9	580	209,444	361.1	436	145,224	333.1
Totals	3,664	804,680	219.6	4,129	1,550,598	375.5	3,630	1,187,810	327.2
Victoria	3,722	1,015,287	272.8	3,110	1,521,692	489.3	3,041	1,083,908	356.4
Peterborough	1,284	222,363	173.2	1,258	497,954	395.8	1,014	333,554	328.9
Haliburton	262	62,225	237.5	281	117,669	418.8	312	81,411	260.9
Hastings	856	140,324	163.9	913	335,856	367.9	661	173,843	263.0
Totals	6,124	1,440,199	235.2	5,562	2,473,171	444.7	5,028	1,672,716	332.7
Muskoka	1,191	279,885	235.0	1,091	377,955	346.4	947	276,226	291.7
Parry Sound	488	118,340	242.5	540	189,000	350.0	608	178,260	293.2
Algoma	362	113,125	312.5	683	221,975	325.0	473	167,869	354.9
Totals	2,041	511,350	250.5	2,314	788,930	340.9	2,028	622,355	306.9
The Province	105,322	31,413,456	298.2	98,931	47,061,053	475.7	98,001	38,209,549	389.9

RATIOS OF AVERAGE PRODUCE.

TABLE No. XXIV.—Showing by County Municipalities and groups of Counties the per cent. ratios of total yields in 1887 to average of total yields for the six years 1882-7.

Counties.	Fall Wheat.	Spring Wheat.	Fall and Sp'g Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Essex	90	64	89	111	119	78	117	83	68	46	96	43	77	95	45
Kent	78	93	79	94	96	140	146	63	80	72	96	33	70	79	50
Elgin	73	33	72	75	88	81	96	70	77	54	93	51	74	101	76
Norfolk	76	50	75	78	68	77	76	51	79	30	80	27	70	57	113
Haldimand	90	64	88	70	82	15	68	72	76	31	94	33	125	93	71
Welland	90	35	87	73	93	62	116	88	79	27	93	46	73	79	81
Group	81	61	80	79	93	75	97	71	78	65	92	38	78	83	84
Lambton	94	36	86	85	92	27	105	76	85	69	104	52	88	89	52
Huron	64	24	58	97	106	79	119	76	115	38	116	60	90	52	86
Bruce	63	58	62	87	97	90	106	95	173	135	132	58	51	63	76
Group	70	37	65	91	100	72	111	77	119	71	118	58	82	60	81
Grey	62	47	54	84	99	93	98	103	71	81	115	67	68	49	82
Simcoe	74	65	71	106	93	53	84	59	117	93	108	47	55	41	52
Group	70	55	64	96	97	61	92	74	93	87	112	57	60	45	75
Middlesex	74	26	68	82	90	103	123	67	85	33	82	51	79	65	79
Oxford	92	30	80	85	87	55	107	76	48	53	84	49	111	57	102
Brant	71	27	70	107	76	106	59	65	54	12	80	48	61	44	92
Perth	64	18	55	77	100	110	108	101	43	92	105	68	102	79	84
Wellington	71	36	53	91	101	71	104	86	50	118	108	64	70	93	76
Waterloo	76	23	71	87	94	61	82	33	97	77	86	60	69	36	86
Dufferin	55	78	68	113	112	61	110	131	209	193	110	74	78	78	90
Group	74	39	67	90	95	75	103	69	67	38	94	60	88	64	85
Lincoln	79	29	75	60	72	12	81	87	52	41	98	62	83	69	88
Wentworth	79	44	77	90	71	57	90	73	52	70	79	50	62	63	82
Halton	94	47	89	97	90	44	63	49	93	80	75	33	93	58	91
Peel	63	50	59	100	89	5	85	78	78	55	88	47	81	69	81
York	67	55	63	100	92	34	99	76	49	55	101	67	53	38	86
Ontario	51	67	63	100	93	42	97	79	90	21	96	68	53	55	91
Durham	83	53	56	97	81	54	87	56	118	64	91	52	68	53	69
Northumberland	79	56	63	91	81	63	69	88	120	54	85	60	61	45	82
Prince Edward	46	77	69	84	73	58	132	83	95	48	75	55	77	27	94
Group	73	58	66	95	85	52	91	79	99	50	89	57	63	52	84
Lennox and Addington	38	67	59	79	87	48	67	72	64	103	70	57	229	109	84
Frontenac	33	64	57	54	71	19	58	80	92	52	60	55	58	77	54
Leeds and Grenville	38	69	59	78	88	16	82	117	65	95	88	72	55	96	80
Dundas	10	97	79	55	81	22	90	125	71	122	106	67	40	77	32
Stormont	45	107	97	71	91	33	76	101	78	60	102	87	7	35	49
Glengarry	32	103	97	96	90	....	91	79	48	55	125	87	177	150	213
Prescott	36	91	91	145	110	12	76	88	39	34	131	84	150	123	89
Russell	23	79	76	126	95	14	69	57	55	34	138	71	75	123	162
Carleton	53	86	83	111	95	43	93	80	49	42	138	59	47	48	49
Renfrew	21	65	63	109	76	47	78	192	71	50	127	52	41	49	56
Lanark	47	76	70	91	83	17	72	88	37	80	121	52	33	35	67
Group	37	79	73	78	88	31	77	98	58	59	106	65	68	67	68
Victoria	70	52	57	108	102	38	98	107	53	89	103	67	84	88	94
Peterborough	70	71	71	76	83	49	70	63	75	32	78	53	60	41	67
Haliburton	160	108	113	83	89	67	108	62	48	63	128	46	79	115	76
Hastings	72	49	58	60	74	50	70	93	80	54	94	44	114	66	81
Group	71	58	62	79	86	49	81	92	77	55	95	51	83	66	86
Muskoka	115	67	69	107	101	50	99	123	112	44	146	71	261	93	101
Parry Sound	61	48	48	69	94	10	113	92	15	12	106	85	63	127	66
Algoma	148	68	73	87	150	158	143	56	142	29	91	111	60	81	67
Group	138	65	68	82	112	43	124	105	94	35	125	87	181	98	82
The Province	74	58	68	89	92	47	94	75	73	61	100	58	76	59	82

RATIOS OF AVERAGE PRODUCE.

TABLE No. XXV.—Showing by County Municipalities and groups of Counties the per cent. ratios of average yields per acre in 1887 to average yields per acre for the six years 1882-7.

Counties.	Fall Wheat.	Spring Wheat.	Fall and Sp'g Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.
Essex	97	84	96	105	101	92	81	85	82	62	94	45	71	72	63
Kent	80	76	80	90	89	78	81	68	74	64	99	39	61	73	68
Elgin	75	66	76	78	83	91	62	72	72	61	90	54	74	81	81
Norfolk	79	62	78	75	64	74	51	51	78	71	80	31	58	46	72
Haldimand	90	65	89	79	76	74	62	97	66	71	91	44	80	80	63
Welland	91	62	91	83	82	82	84	102	86	65	91	51	66	57	61
Group	83	72	83	82	84	79	66	74	77	64	91	42	67	68	73
Lambton	90	49	87	87	84	94	66	84	112	68	108	59	93	82	62
Huron	67	56	69	89	95	100	98	119	132	85	108	67	82	69	87
Bruce	73	69	72	83	86	99	97	88	128	116	117	65	58	62	71
Group	74	61	74	87	90	99	92	88	121	76	111	65	80	68	79
Grey	80	69	76	86	86	111	93	78	63	86	108	78	76	62	73
Simcoe	80	70	77	87	82	84	80	53	93	149	104	51	55	47	52
Group	80	70	77	87	84	90	88	62	78	110	106	65	62	54	68
Middlesex	78	51	78	87	84	85	88	74	64	66	86	60	69	71	77
Oxford	90	53	88	81	79	88	79	81	50	87	86	59	88	73	99
Brant	77	70	78	82	72	92	51	71	53	57	81	53	58	59	73
Perth	63	41	63	86	88	69	95	80	48	74	101	78	94	82	87
Wellington	81	55	75	86	84	85	92	84	88	93	103	71	75	74	76
Waterloo	76	54	77	85	85	98	70	55	93	96	91	65	66	49	84
Dufferin	71	86	79	95	93	79	102	74	105	122	108	80	91	99	88
Group	76	65	81	85	84	85	86	75	61	82	93	68	81	71	83
Lincoln	83	57	83	70	68	89	63	84	63	60	93	67	85	73	75
Wentworth	83	62	82	78	68	79	71	76	72	87	79	61	67	61	64
Halton	102	65	100	91	85	91	55	51	87	95	76	38	100	85	79
Peel	73	67	72	85	82	59	71	70	81	76	85	49	75	76	66
York	78	64	73	86	82	104	88	81	58	82	100	78	60	58	74
Ontario	83	77	77	89	86	89	80	78	82	97	93	71	81	76	80
Durham	87	75	77	84	79	80	79	61	93	69	96	53	69	57	67
Northumberland	79	75	79	82	70	81	60	86	92	85	84	58	62	62	69
Prince Edward	111	101	101	87	71	86	63	92	83	53	82	61	90	39	89
Group	82	74	79	86	79	81	73	81	85	72	89	62	70	65	74
Lennox and Addington	62	83	78	89	76	94	63	85	63	88	59	59	100	80	92
Frontenac	72	78	76	73	66	73	63	90	73	80	58	70	69	73	67
Leeds and Grenville	76	69	70	90	82	71	84	111	76	108	82	79	60	88	70
Dundas	90	86	88	82	76	51	90	134	65	80	101	77	73	73	62
Stormont	89	91	91	93	91	100	86	107	84	70	97	99	48	32	94
Glengarry	87	96	96	88	87	....	120	115	62	70	118	99	95	110	100
Prescott	122	88	88	100	101	72	111	122	48	58	110	87	85	77	58
Russell	77	86	86	94	88	154	94	61	57	61	127	79	142	103	143
Carleton	121	100	101	101	87	91	98	96	44	56	126	74	50	52	52
Renfrew	102	74	74	70	68	69	79	106	64	65	116	53	44	55	60
Lanark	82	77	77	74	71	74	70	110	49	78	114	57	47	41	51
Group	81	84	83	87	81	78	84	108	61	73	98	72	66	65	67
Victoria	87	75	80	91	88	122	86	85	58	87	96	64	67	73	77
Peterborough	84	81	82	73	74	79	67	57	56	97	78	53	57	49	53
Haliburton	119	107	109	83	83	74	96	83	84	54	125	49	69	77	91
Hastings	76	67	71	72	70	81	64	107	69	61	93	55	72	52	62
Group	83	76	79	81	79	81	74	101	67	72	92	56	65	61	71
Muskoka	107	79	80	101	86	85	93	147	120	71	125	66	87	75	81
Parry Sound	92	90	90	81	97	71	119	87	84	81	121	93	138	118	83
Algoma	110	106	107	114	111	98	120	86	81	74	81	103	63	78	88
Group	111	98	100	97	97	84	113	127	112	72	113	83	83	84	82
The Province	80	75	79	85	83	79	81	79	72	67	96	65	74	65	76

ACREAGE UNDER CROP.

TABLE No. XXVI.—Showing by County Municipalities and groups of Counties the total area under crop (including Wheat, Barley, Oats, Rye, Pease, Corn, Buckwheat, Beans, Potatoes, Mangels, Carrots, Turnips and Hay and Clover) in Ontario in the years 1882, 1883, 1884, 1885, 1886 and 1887, with the yearly average for the six years; also the percentage of cleared land under crop in 1887, and the average of the six years 1882-7.

Counties.	Acres under Crop.							Per cent. of cleared land under crop.	
	1887.	1886.	1885.	1884.	1883.	1882.	Average 1882-7.	1887.	1882-7
Essex	141,731	142,539	142,489	139,909	133,467	125,235	137,562	76.2	78.1
Kent	209,760	213,327	214,348	203,471	203,778	173,351	203,006	74.2	76.1
Elgin	170,316	163,126	164,044	158,221	167,957	163,117	164,463	65.5	64 8
Norfolk	158,987	149,639	150,016	151,136	159,717	145,072	152,428	69.9	69.3
Haldimand	140,657	144,177	138,240	137,315	143,981	135,399	139,961	71.1	72.5
Welland	110,625	107,818	110,258	109,451	109,937	109,608	109,616	69.5	70.9
Totals	932,076	920,626	919,395	899,503	918,837	851,782	907,036	71.0	71.7
Lambton	169,383	168,404	170,240	171,253	159,725	152,787	165,299	66.8	68.2
Huron	333,226	328,396	327,741	320,819	349,297	306,927	327,734	63.4	65.0
Bruce	279,224	275,320	264,737	251,250	281,104	250,859	267,082	65.2	66.6
Totals	781,833	772,120	762,718	743,322	790,126	710,573	760,115	64.7	66.3
Grey	350,404	350,694	350,267	340,838	368,928	353,270	352,400	65.3	67.3
Simcoe	305,780	296,462	296,446	291,006	300,804	283,794	295,715	67.4	68.6
Totals	656,184	647,156	646,713	631,844	669,732	637,064	648,115	66.3	67.9
Middlesex	294,600	298,447	305,922	285,139	309,525	307,698	300,222	57.3	60.8
Oxford	217,219	210,386	215,493	208,492	223,829	210,651	214,345	65.0	64.8
Brant	123,499	118,973	118,694	117,442	124,662	120,649	120,653	73.3	72.2
Perth	233,441	227,250	231,255	229,397	245,449	221,700	231,415	65.9	67.3
Wellington	299,848	289,422	289,973	281,689	295,770	277,936	289,106	69.4	69.7
Waterloo	162,251	162,489	163,017	157,933	169,354	159,544	162,432	69.6	70.9
Dufferin	124,518	119,102	123,393	116,059	123,174	116,495	120,457	69.5	70.5
Totals	1,455,376	1,426,069	1,447,747	1,396,151	1,491,763	1,414,673	1,438,630	65.7	66.9
Lincoln	102,570	102,793	100,938	103,746	105,206	96,175	101,905	69.1	69.9
Wentworth	144,974	143,029	139,371	140,809	147,147	141,255	142,764	70.4	69.7
Halton	106,601	105,898	105,984	105,512	111,294	105,162	106,742	64.1	64.3
Peel	160,720	157,939	157,563	155,536	161,615	152,674	157,674	68.7	69.7
York	302,072	291,799	296,885	287,868	295,127	296,330	295,013	73.0	73.5
Ontario	244,909	241,869	236,760	234,996	247,930	241,114	241,263	73.9	74.0
Durham	198,462	203,971	199,060	205,747	212,057	204,779	204,013	73.1	75.7
Northumb'd	219,217	217,006	212,299	215,769	226,222	198,339	214,809	70.2	71.3
Pr. Edward	130,456	133,203	128,686	127,538	133,993	120,278	129,026	71.3	73.6
Totals	1,609,981	1,597,507	1,577,546	1,577,521	1,640,591	1,556,106	1,593,209	71.0	71.9
Lennox and Addington	141,308	142,074	136,608	134,693	141,257	141,610	139,592	71.0	70.5
Frontenac	130,820	136,155	138,324	136,316	142,096	149,848	138,926	64.5	69.6
Leeds & Gren.	232,218	241,882	226,582	229,244	239,339	229,283	233,091	56.9	59.1
Dundas	82,917	85,531	86,351	81,367	87,955	80,069	84,032	60.2	65.4
Stormont	71,549	72,935	71,875	71,596	68,837	73,702	71,749	62.4	64.9
Glengarry	85,813	85,671	85,337	81,262	82,925	88,951	84,993	61.2	63.2
Prescott	87,002	84,285	85,516	79,367	82,520	74,791	82,247	67.6	69.4
Russell	50,772	49,947	51,702	54,020	53,865	37,828	49,689	66.2	69.3
Carleton	180,192	185,333	176,762	176,350	173,569	180,410	178,769	66.3	69.2
Renfrew	163,689	163,814	161,375	158,497	165,129	142,634	159,190	66.8	68.9
Lanark	145,042	148,463	147,594	138,210	138,625	135,284	142,203	51.0	52.0
Totals	1,371,322	1,396,090	1,368,026	1,340,922	1,376,117	1,334,410	1,364,481	62.1	64.4
Victoria	174,256	172,710	171,278	164,639	172,418	167,791	170,515	74.4	74.7
Peterborough	138,392	144,273	148,936	135,933	139,325	130,298	139,526	64.6	67.4
Haliburton	19,634	19,869	18,798	17,452	19,013	19,922	19,115	70.1	75.6
Hastings	207,178	225,397	206,168	216,756	237,707	238,875	222,014	64.7	69.9
Totals	539,460	562,249	545,180	534,780	568,463	556,886	551,170	67.7	70.8
Muskoka	40,805	39,849	37,223	35,850	36,610	25,238	35,929	80.1	79.3
Parry Sound	15,687	17,094	21,375	21,571	23,330	12,913	18,662	64.9	78.3
Algoma	26,360	24,521	24,520	22,494	27,054	25,578	25,088	77.3	92.1
Totals	82,852	81,464	83,118	79,915	86,994	63,729	79,679	75.9	82.7
The Province	7,429,084	7,403,281	7,350,443	7,203.958	7,542,623	7,125,223	7,342,435	66.9	68.5

RATIOS OF AREAS UNDER CROPS.

TABLE XXVII.—Showing by County Municipalities and groups of Counties the number of acres under the various crops in Ontario in 1887 per 1,000 acres of cleared land.

Counties.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Peas.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.	Total.
Essex	162.7	7.4	12.9	174.4	3.5	30.0	158.7	2.6	1.8	190.7	14.5	1.1	.5	.8	761.6
Kent	212.4	12.5	21.0	121.5	3.7	57.7	83.4	3.3	44.6	169.4	10.3	1.1	.5	.9	742.3
Elgin	167.7	4.2	16.2	127.4	4.0	68.7	53.1	5.3	3.6	191.3	10.7	1.0	.6	1.2	655.0
Norfolk	140.3	3.4	28.0	123.6	31.8	88.7	60.5	21.6	1.3	179.2	13.6	.9	.6	5.0	698.5
Haldimand	167.2	15.2	66.6	115.1	1.0	71.4	6.1	4.0	.3	256.3	5.8	1.0	.4	.4	710.8
Welland	143.4	6.6	22.9	132.9	3.2	34.0	33.1	10.0	1.8	290.1	14.0	.9	.6	1.3	694.8
Group	168.8	8.3	27.2	130.9	8.1	60.5	66.3	7.7	11.1	206.2	11.3	1.0	.6	1.7	709.7
Lambton	140.0	22.2	54.8	159.8	.2	54.0	24.5	1.2	1.5	196.6	10.4	1.3	.7	.9	668.1
Huron	131.6	18.1	53.2	149.3	.4	69.0	1.8	.5	.1	184.7	8.8	2.9	.7	12.5	633.6
Bruce	106.0	30.0	44.5	144.1	.8	91.7	1.0	1.1	.3	207.2	10.0	.8	.7	13.6	651.8
Group	124.3	23.2	50.4	149.7	.5	73.9	6.3	.8	.5	195.2	9.6	1.8	.7	10.4	647.3
Grey	41.1	59.5	44.2	169.4	.9	86.3	.8	.7	.2	219.1	11.2	.6	.8	18.3	653.1
Simcoe	112.4	74.1	75.6	147.5	3.1	70.6	1.7	1.0	.1	164.4	13.5	1.5	1.2	7.0	673.7
Group	73.8	66.2	58.6	159.4	1.9	79.1	1.2	.8	.2	194.1	12.2	1.0	1.0	13.1	662.6
Middlesex	139.6	14.5	27.0	140.5	1.0	53.0	17.8	1.5	.3	161.1	9.5	2.7	.8	3.2	572.5
Oxford	121.5	20.6	51.4	164.6	2.0	56.9	22.4	1.9	.4	180.0	8.5	4.0	.7	15.3	650.2
Brant	173.3	3.5	127.0	110.4	5.7	59.7	23.7	4.3	.7	192.2	12.2	2.1	1.0	17.4	733.2
Perth	136.4	19.4	44.4	164.6	1.2	68.4	2.2	.3	.2	193.7	9.7	4.3	1.2	13.1	659.1
Wellington	60.3	36.5	82.1	178.2	1.6	94.4	1.1	.2	.1	194.7	12.3	1.8	.9	29.6	693.8
Waterloo	174.4	12.3	66.2	156.1	1.5	67.5	3.3	.5	.1	177.1	11.6	2.0	.9	22.5	696.0
Dufferin	52.6	105.9	73.4	178.3	3.8	66.3	.5	1.3	.2	182.5	15.9	.6	.7	13.1	695.1
Group	120.1	26.8	59.7	157.8	1.9	67.3	10.3	1.2	.3	181.5	10.9	2.7	.9	15.6	657.0
Lincoln	144.9	8.4	23.9	124.2	.4	38.5	40.6	3.8	.7	289.1	12.3	1.5	.7	1.7	690.7
Wentworth	151.7	10.2	66.2	140.1	3.2	60.4	20.4	2.5	.5	218.2	14.2	1.9	1.1	13.2	703.8
Halton	127.2	15.9	80.0	112.7	1.5	70.6	5.6	1.0	.2	204.1	8.7	2.2	.5	11.0	641.2
Peel	104.1	42.3	161.3	123.5	.5	64.1	1.7	.9	.2	167.7	11.7	1.8	1.2	6.4	687.4
York	82.4	57.1	150.8	159.7	1.5	71.7	2.7	.6	.2	175.1	15.5	3.5	1.1	8.1	730.0
Ontario	20.5	128.2	120.9	147.3	4.4	95.3	6.9	1.2	.2	161.6	11.5	1.5	1.2	38.2	738.9
Durham	11.8	107.2	189.2	122.0	13.1	89.4	5.9	4.5	1.1	153.3	11.5	1.6	1.6	19.0	731.2
Northumberland	31.6	72.1	158.7	106.3	29.0	74.9	11.4	20.8	.9	169.3	14.2	1.4	.5	11.2	702.3
Prince Edward	5.2	31.2	211.4	75.2	34.2	125.6	27.0	39.5	2.4	148.2	12.0	.6	.1	.6	713.2
Group	67.6	61.5	136.9	127.9	9.7	78.0	11.1	7.5	.6	180.3	12.7	1.9	1.0	13.7	710.4
Lennox and Addington	6.5	28.2	183.9	124.2	14.4	46.1	8.8	14.1	1.1	263.5	16.5	1.6	.4	.8	710.1
Frontenac	4.7	35.4	66.0	138.6	5.0	52.4	6.8	9.8	1.1	306.2	16.1	.7	.7	1.3	644.8
Leeds & Grenv'l.	7.1	34.0	23.7	161.8	4.3	15.3	11.9	11.1	.8	281.3	16.2	.4	.4	.6	568.9
Dundas	1.1	40.2	34.3	215.7	5.0	12.8	9.3	11.5	2.2	253.4	15.5	.4	.3	.2	601.9
Stormont	3.7	46.0	16.0	212.7	1.6	21.5	10.2	17.4	1.1	277.3	16.0	.1	.3	.4	624.3
Glengarry	2.0	60.8	16.1	217.3	....	35.3	3.4	5.1	.5	254.0	16.0	.9	.3	.6	612.3
Prescott	.2	66.2	25.9	214.8	.4	55.1	7.5	10.7	2.3	272.1	18.4	.8	.6	1.3	676.3
Russell	.9	51.9	23.5	251.2	.3	41.1	4.9	13.0	1.7	249.4	18.3	.4	1.7	3.8	662.1
Carleton	3.0	70.8	29.9	224.5	12.2	47.1	3.4	16.2	1.3	228.9	17.5	1.8	1.8	4.7	663.1
Renfrew	1.0	90.1	7.9	172.8	19.7	82.9	1.7	5.2	1.4	267.2	15.4	.4	.4	2.2	668.3
Lanark	6.8	50.2	10.7	142.9	4.5	41.3	3.4	16.7	.8	218.2	11.8	.4	.4	2.0	510.1
Group	4.1	51.7	39.3	178.5	7.3	40.9	6.6	11.9	1.1	260.5	15.9	.7	.6	1.7	620.8
Victoria	32.7	101.0	145.6	176.1	1.6	77.8	2.3	1.6	.4	172.5	13.1	2.4	1.4	15.9	744.4
Peterborough	39.0	108.2	65.8	145.4	10.0	74.5	1.7	4.6	.2	176.1	11.9	1.4	1.3	6.0	646.1
Haliburton	4.2	47.6	10.2	176.0	9.2	61.9	3.2	5.1	1.1	348.7	23.2	.3	1.0	9.4	701.1
Hastings	24.5	40.2	104.3	132.7	29.9	61.7	13.5	13.3	.7	206.7	14.7	1.2	.5	2.7	646.6
Group	30.1	76.6	102.7	150.4	15.5	69.9	6.7	7.3	.5	193.4	13.7	1.6	1.0	7.7	677.1
Muskoka	1.2	26.2	11.5	183.0	4.9	55.2	3.3	5.4	.4	453.2	27.8	3.3	1.8	23.4	800.6
Parry Sound	1.1	37.3	21.7	170.3	2.3	50.0	1.4	.9	.1	316.6	25.9	.2	1.1	20.2	649.1
Algoma	12.6	125.3	12.7	146.3	5.4	114.4	1.0	2.6	.1	319.4	21.4	.6	.8	10.5	773.2
Group	4.7	59.6	14.2	168.7	4.5	72.5	2.2	3.5	.2	381.2	25.4	1.8	1.3	18.7	758.5
The Province. 1887.	80.8	43.6	69.1	151.5	6.2	65.4	14.7	5.8	1.9	205.3	12.6	1.6	.8	9.5	668.8
The Province. 1886.	81.0	52.8	67.3	148.3	6.2	64.4	14.3	6.5	1.9	209.8	12.8	1.7	.8	9.0	676.8

RATIOS OF AREAS UNDER CROP.

TABLE No. XXVIII.—Showing by County Municipalities and groups of Counties the average number of acres under various crops per 1,000 acres of cleared land in Ontario for the six years 1882-7.

Counties.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buckwheat.	Beans.	Hay and Clover.	Potatoes.	Mangel-wurzels.	Carrots.	Turnips.	Totals.
Essex	184.4	10.2	12.9	156.5	4.4	21.9	168.8	3.6	2.5	197.1	16.1	1.1	.4	1.2	781.1
Kent	230.5	10.8	21.3	118.7	2.2	33.7	95.9	3.3	41.7	186.7	13.2	1.0	.5	1.3	760.8
Elgin	177.2	8.4	17.3	123.3	4.6	44.8	57.6	5.1	4.3	191.1	11.5	1.0	.5	1.3	648.0
Norfolk	151.0	4.4	27.5	118.5	32.2	62.1	64.5	22.6	4.1	185.3	16.5	.8	.5	3.3	693.3
Haldimand	171.8	15.9	76.7	109.7	4.9	65.7	9.9	3.8	.8	256.3	8.0	.6	.4	.4	724.9
Welland	149.3	12.3	26.5	120.1	4.3	25.2	42.2	11.4	5.3	293.6	16.0	.8	.5	1.0	708.5
Group	180.6	10.1	29.5	123.6	8.9	43.1	73.2	8.1	11.5	212.5	13.4	.9	.5	1.5	717.4
Lambton	140.7	31.8	59.4	152.3	.8	35.1	29.6	1.7	1.5	213.1	12.5	1.4	.7	1.1	681.7
Huron	142.5	44.6	51.0	140.5	.5	59.4	3.3	.6	.2	180.3	10.2	2.8	1.0	13.2	650.1
Bruce	129.5	38.2	45.9	136.5	1.0	89.3	1.1	.9	.3	196.5	12.0	1.0	.7	13.6	666.5
Group	137.6	39.6	51.0	141.6	.7	64.7	8.1	.9	.5	192.9	11.3	1.9	.9	10.8	662.5
Grey	54.7	90.8	46.3	151.4	1.1	83.9	.7	.7	.2	211.7	13.4	.7	1.1	16.7	673.4
Simcoe	127.2	84.6	65.3	136.3	5.2	70.8	1.7	.8	.2	167.7	15.6	1.6	1.4	7.3	685.7
Group	87.4	88.0	54.9	144.6	2.9	78.0	1.2	.7	.2	191.9	14.4	1.1	1.2	12.5	679.0
Middlesex	153 6	29.3	29.8	136.3	.9	39.6	21.4	1.2	.7	176.9	11.7	2.5	1.0	3.2	608.1
Oxford	120.2	36.6	49.9	149.9	3.3	42.7	26.1	2.0	.8	187.3	10.3	3.2	1.0	15.1	648.4
Brant	190.2	9.2	98.1	105.5	5.0	51.5	27.9	4.3	4.1	195.4	13.4	2.1	1.3	14.0	722.0
Perth	138.0	46.4	51.3	150.5	.8	61.7	2.0	.3	.2	191.1	11.3	4.1	1.2	14.1	673.0
Wellington	70.7	58.0	80.6	154.9	2.0	87.4	1.3	.3	.1	193.9	14.3	2.0	.7	30.9	697.1
Waterloo	179.2	29.0	65.7	143.8	2.4	58.5	6.4	.5	.2	185.0	12.9	1.9	1.3	22.4	709.2
Dufferin	70.7	122.6	64.6	155.2	5.3	64.3	.4	.6	.1	187.8	17.9	.8	.9	13.4	704.6
Group	129.0	44.5	58.1	144.2	2.3	57.7	12.4	1.1	.7	187.2	12.7	2.5	1.0	15.8	669.2
Lincoln	154.7	17.0	28.4	119.6	3.4	30.6	42.5	5.3	1.0	279.6	13.5	1.5	.7	1.5	699.3
Wentworth	159.0	14.3	58.1	135.1	4.5	47.8	22.6	3.6	.7	220.2	17.5	2.0	1.0	10.3	696.7
Halton	139.5	22.1	74.6	106.6	3.0	61.2	6.2	1.0	.3	206.0	10.0	2.4	.7	9.6	643.2
Peel	124.8	59.1	141.7	117.3	6.6	56.0	1.7	1.1	.3	167.1	12.5	1.8	1.3	5.4	696.7
York	99.7	68.6	133.9	146.9	4.7	65.6	3.2	.7	.4	179.1	18.7	4.2	1.8	7.1	734.6
Ontario	34.1	149.2	109.9	139.1	9.6	79.2	7.3	1.2	1.1	159.2	12.1	2.3	1.6	34.4	740.3
Durham	12.4	152.6	164.5	119.3	19.8	80.8	7.0	3.4	1.3	162.2	11.8	1.6	1.8	18.5	757.0
Northumberland	32.6	101.3	148.3	94.7	38.5	67.0	12.5	15.8	1.8	174.1	14.0	1.5	.8	9.7	712.6
Prince Edward	13.0	42.6	229.7	77.2	52.4	62.8	36.0	34.8	2.6	169.5	13.9	.7	.2	.6	736.0
Group	78.1	80.2	126.0	120.8	15.6	64.2	12.6	6.5	1.0	183.9	14.1	2.2	1.2	12.3	718.7
Lennox & Add'n	10.4	35.3	209.2	108.9	28.3	44.2	11.2	14.0	.8	223.6	17.3	.7	.3	.9	705.1
Frontenac	10.4	43.9	91.1	130.1	19.9	58.0	8.0	8.0	1.6	302.1	19.9	.8	.7	1.7	696.2
L'ds & Grenville	14.6	35.7	28.2	156.7	19.6	16.2	12.0	14.0	.9	273.8	18.4	.5	.4	.5	591.5
Dundas	10.9	38.0	55.5	219 3	12.4	13.8	10.9	11.1	1.5	260.0	19.1	.9	.3	.4	654.1
Stormont	7.7	40.8	21.7	220.3	5.0	25.2	11.1	20.2	1.1	276.0	19.0	.3	.3	.8	649.5
Glengarry	5.7	59.3	15.5	220.4	.5	48.0	5.4	7.8	.8	248.4	18.8	.5	.3	.3	631.7
Prescott	.8	68.9	19.4	213.6	2.6	87.0	11.3	14.7	4.4	248.7	20.6	.5	.4	.9	693.8
Russell	3.3	61.0	18.7	248.6	3.7	60.1	6.0	14.3	3.4	246.8	21.8	.7	1.5	3.5	693.4
Carleton	7.3	86.8	28.5	217.3	27.1	52.0	4.3	15.0	1.7	220.0	23.1	2.1	2.0	5.2	692.4
Renfrew	5.2	107.2	5.4	164.0	30.5	89.9	2.1	5.2	2.0	257.9	16.4	.5	.5	2.5	689.3
Lanark	12.4	52.6	9.1	126.6	20.0	41.6	4.7	23.2	.8	213.0	13.3	.5	.5	1.6	519.9
Group	9.3	57.3	45.8	171.5	18.7	46.2	7.8	13.6	1.5	251.0	18.5	.8	.6	1.7	644.3
Victoria	41.7	149.8	126.9	156.5	5.1	70.2	1.9	1.7	.5	163.7	12.8	2.0	1.2	13.3	747.3
Peterborough	48.3	127.4	65.7	135.1	16.6	73.0	1.6	3.6	.7	181.5	12.3	1.4	1.5	4.9	673.6
Haliburton	3.5	52.1	11.1	180.9	11.3	61.1	5.0	9.9	1.0	379.3	27.5	.3	.7	12.3	756.0
Hastings	26.1	54.7	127.3	127.9	48.9	56.5	17.1	12.3	.8	205.8	18.6	.8	.4	2.1	699.3
Group	35.9	101.8	107.0	139.9	26.2	65.1	8.1	6.8	.7	192.6	15.5	1.3	1.0	6.5	708.4
Muskoka	1.2	34.6	12.3	176.6	9.3	58.2	4.7	6.7	.9	436.3	28.8	1.2	1.6	20.9	793.3
Parry Sound	1.7	71.2	29.7	177.5	17.1	53.6	1.8	5.9	.6	367.9	28.7	.5	1.1	25.5	782.8
Algoma	11.7	243.2	20.7	134.8	4.2	119.7	2.2	2.4	.2	338.2	24.8	.8	1.0	17.4	921.3
Group	4.3	102.6	19.0	165.0	9.8	74.4	3.3	5.3	.6	391.7	27.6	.9	1.3	21.1	826.9
The Province	90.3	58.4	68.5	142.0	10.7	58.3	16.8	5.9	2.1	205.4	14.6	1.6	.9	9.1	684.6

PASTURE.

TABLE No. XXIX.—Showing by County Municipalities and groups of Counties the area of Pasture in Ontario in the four years 1884-7, with the annual average for the period; also the rate per 1,000 acres cleared in the year 1887.

Counties.	1887*.	1886.	1885.	1884.	1884-7.	No. of acres per 1,000 cleared in 1887.
Essex	27,584	64,251	62,457	46,864	50,289	148.2
Kent	48,229	89,037	89,292	69,097	73,914	170.7
Elgin	65,609	79,679	74,624	77,510	74,355	252.3
Norfolk	38,178	47,308	50,528	44,788	45,201	167.7
Haldimand	37,512	43,950	39,206	40,372	40,260	189.6
Welland	23,474	33,681	32,216	31,065	30,109	147.4
Totals	240,586	357,906	348,323	309,696	314,128	183.2
Lambton	62,980	95,926	88,689	90,831	84,606	248.4
Huron	135,339	152,711	140,784	141,278	142,528	257.3
Bruce	97,997	107,344	98,469	95,992	99,951	228.8
Totals	296,316	355,981	327,942	328,101	327,085	245.3
Grey	130,069	145,408	138,009	133,244	136,683	242.4
Simcoe	74,834	84,680	76,948	79,200	78,915	164.9
Totals	204,903	230,088	214,957	212,444	215,598	206.9
Middlesex	165,443	201,599	182,945	178,001	181,997	321.5
Oxford	85,497	104,404	103,255	104,277	99,358	255.9
Brant	27,827	34,683	34,402	33,736	32,662	165.2
Perth	79,952	92,925	89,555	86,036	87,117	225.7
Wellington	84,499	100,363	93,601	91,679	92,536	195.5
Waterloo	36,013	36,393	37,477	36,702	36,646	154.5
Dufferin	33,118	37,539	34,960	40,402	36,505	184.9
Totals	512,349	607,906	576,195	570,833	566,821	231.2
Lincoln	25,764	31,583	30,464	28,630	29,110	173.5
Wentworth	35,678	47,835	43,905	44,379	42,949	173.2
Halton	38,980	39,353	39,215	38,601	39,037	234.4
Peel	36,940	40,323	35,993	34,667	36,981	158.0
York	59,777	70,292	68,306	71,460	67,459	144.5
Ontario	61,746	69,971	68,628	67,936	67,070	186.3
Durham	46,827	53,979	55,059	53,913	52,445	172.5
Northumberland	64,257	72,179	70,475	62,609	67,380	205.9
Prince Edward	34,924	40,072	41,021	35,816	37,958	190.9
Totals	404,893	465,587	453,066	438,011	440,389	178.7
Lennox and Addington	51,121	65,471	67,812	63,711	62,029	256.9
Frontenac	55,039	71,217	74,306	61,898	65,615	271.3
Leeds and Grenville	142,604	174,549	168,109	154,231	159,873	349.4
Dundas	38,930	47,695	43,824	41,960	43,102	282.6
Stormont	36,033	42,724	39,609	39,276	39,411	314.4
Glengarry	44,873	48,086	46,675	48,167	46,950	320.2
Prescott	32,942	46,093	42,499	37,627	39,790	256.1
Russell	19,481	23,477	22,793	22,507	22,064	254.0
Carleton	75,490	90,008	82,294	87,307	83,775	277.8
Renfrew	59,946	72,794	69,711	62,423	66,218	244.8
Lanark	110,575	108,900	107,631	105,237	108,086	388.9
Totals	667,034	791,014	765,263	724,344	736,913	302.0
Victoria	40,763	47,718	49,735	47,941	46,539	174.1
Peterborough	50,567	52,550	55,785	46,477	51,345	236.1
Haliburton	5,112	7,060	5,494	5,022	5,672	182.5
Hastings	90,408	93,640	97,240	95,636	94,231	282.2
Totals	186,850	200,968	208,254	195,076	197,787	234.5
Muskoka	8,324	9,187	9,344	8,456	8,828	163.3
Parry Sound	4,042	3,064	3,869	4,332	3,827	167.2
Algoma	3,642	4,620	3,986	3,693	3,985	106.8
Totals	16,008	16,871	17,199	16,481	16,640	146.6
The Province	2,528,939	3,026,321	2,911,199	2,794,986	2,815,361	227.7

* The schedule to farmers was changed in 1887 so as to include pasture on cleared lands only.

ORCHARD AND GARDEN.

TABLE No. XXX.—Showing by County Municipalities and groups of Counties the area in Orchard and Garden in Ontario as taken from the assessor's rolls in the six years 1882-7, with the annual average for the period; also, the rate per 1,000 acres cleared in 1887, and the average for the period 1882-7.

Counties.	1887.	1886.	1885.	1884.	1883.	1882.	1882-7.	No. of acres per 1,000 cleared.	
								1887.	1882-7.
Essex	5,723	5,768	6,015	5,814	6,081	6,399	5,967	30.8	33.9
Kent	6,695	7,305	7,615	8,117	7,432	7,849	7,502	23.7	28.1
Elgin	6,572	6,696	6,881	6,951	7,360	7,640	7,017	25.3	27.6
Norfolk	6,826	7,470	8,024	7,909	7,935	8,770	7,822	30.0	35.6
Haldimand	4,150	4,541	4,528	4,755	4,995	4,891	4,643	21.0	24.0
Welland	7,101	7,248	6,781	6,406	6,281	7,151	6,828	44.6	44.1
Totals	37,067	39,028	39,844	39,952	40,084	42,700	39,779	28.2	31.5
Lambton	6,386	5,961	5,596	5,896	6,031	6,490	6,060	25.2	25.0
Huron	8,468	8,539	8,478	8,624	7,849	8,775	8,455	16.1	16.8
Bruce	5,020	5,446	5,851	5,432	6,027	6,213	5,665	11.7	14.1
Totals	19,874	19,946	19,925	19,952	19,907	21,478	20,180	16.5	17.6
Grey	6,778	6,719	7,105	7,160	7,347	8,262	7,229	12.6	13.8
Simcoe	4,351	4,378	4,450	4,417	4,881	6,085	4,760	9.6	11.0
Totals	11,129	11,097	11,555	11,577	12,228	14,347	11,989	11.2	12.6
Middlesex	9,309	10,100	11,000	10,966	10,534	12,242	10,692	18.1	21.7
Oxford	8,432	8,208	8,666	8,728	8,795	9,142	8,662	25.2	26.2
Brant	4,334	4,488	4,651	4,750	5,260	5,213	4,783	25.7	28.6
Perth	4,553	4,410	4,626	4,964	5,668	5,643	4,977	12.9	14.5
Wellington	4,406	4,643	4,772	5,181	5,136	5,790	4,988	10.2	12.0
Waterloo	4,958	5,221	5,295	5,450	5,693	5,191	5,301	21.3	23.1
Dufferin	1,410	1,234	1,583	1,589	1,714	1,766	1,549	7.9	9.1
Totals	37,402	38,304	40,593	41,628	42,800	44,987	40,952	16.9	19.0
Lincoln	7,863	8,059	8,075	8,057	7,808	7,878	7,957	52.9	54 6
Wentworth	8,922	9,197	9,324	9,340	9,529	8,134	9,074	43.3	44.3
Halton	4,551	4,603	4,991	4,721	4,829	5,332	4,838	27.4	29.2
Peel	3,786	4,452	4,128	4,000	4,001	4,556	4,154	16.2	18.4
York	6,836	8,128	7,744	7,394	9,239	8,881	8,037	16.5	20.0
Ontario	5,351	5,298	5,330	5,457	5,492	5,734	5,444	16.1	16.7
Durham	3,929	3,897	3,825	3,908	3,926	4,898	4,064	14.5	15.1
Northumberland	6,478	6,485	6,683	6,405	6,757	6,203	6,502	20.8	21.6
Prince Edward	6,364	6,503	6,696	5,830	5,777	6,943	6,352	34.8	36.2
Totals	54,080	56,622	56,796	55,112	57,358	58,559	56,422	23.9	25.5
Lennox and Addington	2,840	2,448	2,671	2,767	2,810	3,535	2,845	14.3	14.4
Frontenac	2,211	2,170	1,966	2,164	2,343	3,148	2,334	10.9	11.7
Leeds and Grenville	2,968	3,121	3,062	3,210	3,410	4,412	3,364	7.3	8.5
Dundas	1,074	1,170	1,262	1,338	1,313	1,212	1,228	7.8	9.6
Stormont	888	930	920	1,029	1,216	1,400	1,064	7.7	9.6
Glengarry	460	470	525	634	704	983	629	3.3	4.7
Prescott	271	220	166	222	149	576	267	2.1	2.3
Russell	127	121	164	113	114	322	160	1.7	2.2
Carleton	319	431	470	593	467	1,391	612	1.2	2.4
Renfrew	269	283	842	1,043	897	738	679	1.1	2.9
Lanark	974	1,011	1,097	1,207	1,337	1,311	1,156	3.4	4.2
Totals	12,401	12,375	13,145	14,320	14,760	19,028	14,338	5.6	6.8
Victoria	1,423	1,729	1,818	2,299	2,022	2,279	1,928	6.1	8.4
Peterborough	1,829	1,861	1,969	1,954	2,025	2,352	1,998	8.5	9.6
Haliburton	61	176	37	62	78	190	101	2.2	4.0
Hastings	5,598	4,869	5,014	5,465	5,825	7,464	5,706	17.5	18.0
Totals	8,911	8,635	8,838	9,780	9,950	12,285	9,733	11.2	12.5
Muskoka	316	393	349	398	265	99	340	6.2	7.5
Parry Sound	7		56	48	50	317	34	.3	1.4
Algoma	255	216	165	70	48	46	142	7.5	5.2
Totals	578	609	570	516	363	462	516	5.3	5.4
The Province	181,442	186,616	191,266	192,837	197,450	213,846	193,909	16.3	18.1

PART II.

LIVE STOCK, THE DAIRY AND THE APIARY.

LIVE STOCK.

Live stock wintered well, and in most parts of Ontario spring and early summer pastures were excellent. Had it not been for this combination of circumstances the live stock interest throughout the province would have been in a lamentable condition, for the intense heat and long continued dry period, which in many parts of the province commenced early in June and continued until autumn, had the effect of literally burning up almost everything in the shape of pasture, leaving animals almost wholly dependent upon soiling crops, early cut fodder or browse. It is in emergencies like these that the intelligent and enterprising farmer or stock-man comes prominently to the front, as compared with his slow-going neighbor, who is always content to farm as his forefathers did, without reference to the altered conditions sure to be brought about in a few generations. According to the testimony of nearly all the correspondents of the Bureau, pasture fields during the greater part of the summer and fall presented a melancholy picture from one end of Ontario to the other, and yet a majority of the November reports stated that though somewhat thin farm animals were generally in a thrifty condition and usually free from epidemic or other diseases. This of course was partially due to the fact that they were well wintered, and that in the early part of the season pastures were rather above than below the average ; but it is also largely accounted for by the circumstance that many farmers and stock-men had the foresight and intelligence to provide against such misfortunes as the one which fell upon them last summer by sowing crops for green feeding or soiling. Had the season proved favorable for pastures these crops could have been harvested for winter feed (either cured dry or ensiled), in which case they would have amply repaid the farmer for all that they cost him, while in the presence of such a misfortune as the long continued drouth they proved well nigh invaluable in tiding the stock-raisers over what would otherwise have proved a serious calamity. As the root crop was also seriously affected by the drouth as well as by insect pests, the question of winter fodder was a serious one to many farmers, but thanks to a fair and well saved hay crop and a superior quality of straw it was expected that with careful economy the supplies would be sufficient in most parts of the province, unless the winter proved an unusually long and severe one. Of fattening on grass there was little or none, and farmers wisely anticipated the scarcity of winter supplies by disposing in the fall to drovers and others of such of their cattle as were saleable even at the prevailing low prices, so as to avoid the necessity of expensive winter feeding. In a few localities pinching was expected to be the rule, owing in some cases to a failure of the root crops, and in others—notably in some eastern counties —to the destruction of large quantities of hay by fires. A fair supply of stall-fed beef was predicted, but for obvious reasons it is not likely to be of the very best quality. As usually happens, sheep fared not so badly on the short pastures, and they were generally reported to be in good condition. Hogs,

too, appeared to have suffered little from the unfavorable season. A larger quantity of pork than usual found an early market, and in other cases fattening was well advanced when the reports were sent to the Bureau in the last week of October.

HORSES.—The following table shows the number of working horses, breeding mares and unbroken horses in the province by county groups for 1887, and also the totals for each of the five years 1883-7 :

Districts.		Working Horses.	Breeding Mares.	Unbroken Horses.	Totals.				
					1887.	1886.	1885.	1884.	1883.
Lake Erie		39,442	15,740	22,357	77,539	77,949	75,408	74,116	75,924
Lake Huron		28,754	12,708	18,474	59,936	59,879	58,189	56,414	58,424
Georgian Bay		24,218	9,229	14,327	47,774	46,828	46,054	43,316	45,877
West Midland		59,061	23,177	32,291	114,529	111,454	111,271	106,324	111,614
Lake Ontario		65,430	24,265	36,018	125,713	126,204	122,078	117,985	120,945
St. Law. & Ottawa.		55,304	19,304	31,292	105,900	105,228	102,938	96,889	103,868
East Midland		22,181	6,636	11,121	39,938	38,066	39,048	37,412	39,763
Northern districts		2,114	848	1,070	4,032	4,041	3,823	3,497	3,718
The Province	1887	296,504	111,907	166,950	575,361	.....	.....	.....	.....
	1886	300,682	107,000	161,967	.....	569,649	.....	.....	.....
	1885	311,587	95,963	151,259	.....	.....	558,809	.....	.....
	1884	303,474	93,910	138,569	.....	.....	.....	535,953	.....
	1883	349,552	87,380	123,201	.....	.....	.....	.....	560,133

The schedule sent out in 1883 was not sufficiently explicit in calling for a separation of breeding mares from working horses, and it is more than probable that many of the first class were entered under both heads, as may be seen by a glance at the figures for that year. While the total number of horses has steadily increased since 1884, the number of working horses in 1887 is less than in any of the four years ; the increase in the total has been almost even between unbroken horses and breeding mares, being about 5,000 in each class. Although the St. Lawrence and Ottawa group of counties has the largest rural population, it will be seen that the Lake Ontario and the West Midland groups exceed it in the total number of horses. While the increase in the total number of horses in the province was 5,712 as compared with the previous year, there was a slight falling off in the Lake Ontario and Lake Erie groups. The greatest increase was observable in the West Midland group, there being an addition of 3,075 horses, or more than one-half of the total increase in the province. The proportion of breeding mares to the total number of horses was smallest in the East Midland counties being but 16.6 per cent., while the percentage of breeding mares in the province was 19.4. The percentage of unbroken horses was least in the newer settlements comprising the Northern districts, but the proportion was nearly even in each of the other groups.

HORNED CATTLE.—The statistics of horned cattle are given in the following table by groups of counties in their several classes for 1887, and in totals for each of the previous four years :

Districts.	Working Oxen.	Milch Cows.	Store Cattle over two years.	Young and other Cattle.	Totals.				
					1887.	1886.	1885.	1884.	1883.
Lake Erie ...	1,579	86,054	46,208	98,493	232,334	239,183	230,142	222,016	213,059
Lake Huron .	1,257	73,112	58,125	112,467	244,961	250,631	244,300	246,755	232,347
Georgian Bay	2,386	54,528	37,679	75,564	170,157	178,296	179,073	176,464	164,261
West Midland	1,210	150,646	94,102	183,398	429,356	447,929	438,807	431,885	407,749
Lake Ontario.	1,519	122,504	63,523	124,937	312,483	326,751	316,302	303,675	284,213
St. Law. & Ott.	1,415	193,685	63,543	136,587	395,230	412,176	401,086	384,215	371,582
East Midland	2,292	59,692	25,137	51,856	138,977	137,991	139,938	135,047	131,454
Nor. districts.	2,105	8,100	4,263	10,298	24,766	25,216	26,832	25,613	23,948
The Province. 1887	13,763	748,321	392,580	793,600	1,948,264	.....	.....	.....	.....
1886	14,414	746,897	418,079	838,783	.....	2,018,173	.....	.....	.....
1885	15,302	750,005	373,856	837,317	.....	.....	1,976,480	.....	.....
1884	16,793	710,519	384,453	813,905	.....	.....	.....	1,925,670	.....
1883	17,071	690,437	321,471	799,634	.....	.....	.....	.....	1,828,613

The returns show a falling off of 69,909 in the total number of horned cattle in the province compared with 1886. The largest decrease appears to have been in the class of young cattle ; there being 45,183 less of that class reported in 1887 than in the previous year. There was also less store cattle by 25,499 than in 1886, while working oxen, which had fallen in number from 17,071 in 1883 to 14,414 in 1886, were still further reduced in 1887 to 13,763. In many counties of Ontario the ox as a draught beast will soon be a curiosity. In the West Midland counties, for instance, one will need to search out over 700 cattle on an average before a yoke of oxen will be found. Half of the oxen in the province are to be found in the newer settlements in the Northern districts and in the East Midland and Georgian Bay groups. Milch cows show an increase over the previous year, although the additions appear to have been confined to the East Midland group and the Northern districts. The St. Lawrence and Ottawa counties lead as a dairying section, about 49 per cent of the cattle in that group being milch cows, while the percentage for the province was 38.4. One deduction to be drawn from the figures presented in the above table is that the farmers of the province are now handling their stock more with an eye to the dairy than for beef. The success of the cheese and creamery butter industries has given a new trend to stock-raising in Ontario, and with the further development of these two great branches of dairying it is likely that the milch cow will increase her popularity among the farmers of the province generally.

SHEEP.—In the subjoined table the statistics of sheep are given, classified as coarse and fine-woolled, by groups of counties for 1887, and for the province for each of the five years 1883-7 :

Districts.	Coarse-woolled.		Fine-woolled.		Totals.				
	Over 1 year.	Under 1 year.	Over 1 year.	Under 1 year.	1887.	1886.	1885.	1884.	1883.
Lake Erie...	66,775	44,546	23,661	17,863	152,850	171,238	186,718	205,532	202,382
Lake Huron.	84,104	56,716	17,098	11,541	169,459	191,776	210,183	238,994	234,489
Georgian B..	82,975	51,040	19,909	13,668	167,592	189,405	207,313	213,484	192,890
W. Midland.	119,414	80,456	34,189	24,531	258,590	300,149	343,009	373,798	384,839
L. Ontario..	100,220	60,019	33,708	22,503	216,450	263,571	277,975	297,483	295,004
St. L. & O..	162,112	88,223	39,720	25,075	315,130	369,851	387,685	421,472	424,017
E. Midland.	50,194	27,311	12,213	8,087	97,805	105,664	123,618	122,102	119,432
N. districts.	8,141	5,464	2,980	1,700	18,285	19,295	19,104	17,868	15,731
The Province. 1887	673,935	413,775	183,478	124,973	1,396,161	.....	.....	.....	.....
1886	790,652	476,970	206,371	136,956	.....	1,610,949	.....	.....	.....
1885	908,762	547,952	176,248	122,643	.....	.....	1,755,605	.....	.....
1884	994,608	595,996	176,341	123,788	.....	.....	.....	1,890,733	.....
1883	1,043,080	580,095	150,281	95,328	.....	.....	.....	.....	1,868,784

These statistics show that sheep raising is declining in favor in Ontario, although a comparison in the various years reveals the fact that the real decrease belongs to the coarse-woolled class. Compared with the previous year, there was a decrease of 214,788 in the total number of sheep in the province in 1887, or over 13 per cent., 179,912 being of the coarse-woolled variety and 34,876 fine-woolled. In the three years since 1884 the total number of sheep has fallen from 1,890,733 to 1,396,161, a difference of nearly half a million head, or over 26 per cent. The most hopeful fact to be noticed in the table is that although it shows the number of fine-woolled sheep in 1887, as has already been stated, to be 34,876 less than in 1886, the figures for 1887 are at the least 8,000 greater than those of 1884 or 1885, and 62,842 more than in 1883. The real decrease has been in the coarse-woolled class, there being only about two-thirds as many sheep of that variety in Ontario in 1887 as there was in 1883.

THE WOOL CLIP.—In the table following the wool clip for the past two years and the average for the six years 1882-7 are given in pounds by county groups and for the province:

Districts.	Coarse.		Fine.		Total Clip.		
	1887.	1886.	1887.	1886.	1887.	1886.	1882-7.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Lake Erie..	388,093	447,481	121,129	130,126	509,222	577,607	633,306
Lake Huron.....	482,146	568,373	93,483	94,541	575,629	662,914	730,694
Georgian Bay.... ...	458,825	550,847	101,870	108,017	560,695	658,864	655,652
West Midland.....	691,324	840,963	179,534	209,930	870,858	1,050,893	1,189,924
Lake Ontario.....	609,958	760,846	185,774	227,609	795,732	988,455	1,018,747
St. Law. & Ottawa...	769,106	958,560	197,061	228,122	966,167	1,186,682	1,192,026
East Midland..... ..	259,989	304,188	59,293	52,295	319,282	356,483	381,394
Northern districts ...	46,213	49,665	14,451	16,304	60,664	65,969	58,174
The Province 1887..	3,705,654	.....	952,595	.....	4,658,249	.. ..	.....
The Province 1886..	.....	4,480,923	.....	1,066,944	....	5,547,867	.....
The Province 1882-7	4,936,323	.....	923,594	.....	.....	.....	5,859,917

With the thinning of the flocks the wool clip of the province has also steadily declined. The total clip of 1887 was 4,658,249 lb., being 1,201,668 lb. below that of the annual average, and 889,618 lb. less than in 1886. During the last year the decrease was divided between the two grades of sheep as follows: coarse-woolled, 775,269 lb.; fine-woolled, 114,349 lb. But while there has been a marked decrease in the number of sheep in the province and the total yield of wool, there has been a decided increase in the weight of the average fleece of both the coarse and fine-woolled sorts, as will be seen by the following table:

Districts.	Coarse Wool.			Fine Wool.		
	1887.	1886.	1882-7.	1887.	1886.	1882-7.
	lb.	lb.	lb.	lb.	lb.	lb.
Lake Erie.....	5.84	5.75	5.65	5.15	4.89	4.95
Lake Huron.....	5.86	5.70	5.70	5.47	5.20	5.36
Georgian Bay	5.72	5.56	5.51	5.13	4.97	5.15
West Midland.....	5.90	5.76	5.73	5.21	5.33	5.27
Lake Ontario..	6.13	6.04	5.99	5.48	5.29	5.36
St. Lawrence and Ottawa..	4.97	4.87	4.79	5.01	4.73	4.84
East Midland	5.40	5.23	5.21	5.16	4.62	4.88
Northern districts	5.78	5.59	5.66	5.15	5.06	5.16
The Province.....	5.64	5.52	5.49	5.22	5.04	5.11

The average weight per fleece of coarse wool is 5.64 lb., being .12 lb. more than in 1886 and .15 lb. more than the average for the years 1882-7. The average weight per fleece of fine wool is 5.22 lb., being .18 lb. greater than in 1886 and .11 lb. more than for 1882-7. The two classes combined show an average weight per fleece of 5.43 lb., while in 1886 they averaged

5.28 lb., and for the six years 5.30 lb. In every group of counties each class made an increase in weight over last year's record except in the West Midland district, where the average fleece of fine wool fell .12 lb. below that of 1886. In coarse wool the Lake Ontario counties led in the average weight per fleece, the figures being 6.13 lb. or nearly a half pound per fleece heavier than the average for the province. This group also shows the largest average weight per fleece in fine wool, going slightly over a quarter of a pound per fleece compared with the average of the province for the six years; the Lake Huron district comes a good second with exactly a quarter of a pound over the average for the province. The lightest fleeces of both coarse and fine wool are reported from the St. Lawrence and Ottawa counties.

Hogs.—In the table which follows the number of hogs is given by groups of counties and for the whole province:

Districts.	Hogs.		Totals.				
	Over one year.	Under one year.	1887.	1886.	1885.	1884.	1883.
Lake Erie	35,638	150,205	185,843	183,358	163,002	163,451	173,120
Lake Huron	15,644	54,056	69,700	69,942	69,709	87,521	81,824
Georgian Bay	18,457	52,558	71,015	76,193	77,763	91,711	82,832
West Midland	30,611	131,990	162,601	166,002	155,767	178,755	177,050
Lake Ontario	37,770	116,908	154,678	170,014	163,933	181,518	172,738
St. Lawrence & Ottawa	47,513	78,548	126,061	137,263	132,154	140,165	146,455
East Midland	19,868	36,931	56,799	50,327	51,418	60,843	62,236
Northern districts	1,443	4,677	6,120	7,026	8,516	12,194	10,472
The Province—1887	206,944	625,873	832,817	.....	.....	.....	.....
The Province—1886	207,487	652,638	.....	860,125	.....	.....	.....
The Province—1885	225,512	596,750	.....	.....	822,262	.....	.....
The Province—1884	257,711	658,447	.....	.....	.....	916,158	.....
The Province—1883	245,996	660,731	.....	.....	.....	.....	906,727

These figures call for little comment. There is a slight falling off in the total number of hogs, although an increase is recorded in the East Midland group as well as in the Lake Erie counties. The latter are regarded as the great swine raising counties of the province, for while the rural population of the group is about 13 per cent., the proportion of hogs raised is over 22 per cent. of the total of the province.

Poultry.—By no means the least important branch of Canadian farming is the raising of domesticated fowls. The breeding of poultry is valuable not only on account of the flesh of the birds and the comparatively small cost of bringing them to maturity, but also on account of the proceeds from their eggs, for this latter item is one of the sources depended on by the farmers to meet the current store bills. The following table

presents the number of poultry in the province by county groups for each of the five years 1883-7 :

Districts.	Turkeys.	Geese.	Other Fowls.	Total Poultry.				
				1887.	1886.	1885.	1884.	1883.
Lake Erie	70,365	54,641	817,635	942,641	1,007,965	942,877	824,977	800,799
Lake Huron	27,817	47,639	628,393	703,849	740,057	655,455	671,133	616,699
Georgian Bay	33,451	48,901	467,537	549,889	579,679	524,427	525,544	475,973
West Midland	71,320	79,283	1,141,482	1,292,085	1,377,089	1,284,037	1,232,858	1,156,975
Lake Ontario	84,951	86,811	1,088,892	1,260,654	1,371,697	1,234,590	1,234,179	1,132,072
St. Law. & Ottawa.	96,878	73,778	1,012,061	1,182,717	1,394,001	1,247,901	1,266,214	1,193,355
East Midland	21,812	33,026	389,924	444,762	433,790	390,272	413,263	412,496
Northern districts	3,004	3,976	54,784	61,764	64,637	57,246	69,438	58,975
The Province 1887	409,598	428,055	5,600,708	6,438,361	.....	.....	.....	.....
The Province 1886	522,714	493,756	5,952,445	.....	6,968,915	.....	.....	.....
The Province 1885	428,233	476,942	5,431,630	.....	.....	6,336,805	.....	.....
The Province 1884	445,532	540,130	5,251,944	.....	.....	.....	6,237,606	.....
The Province 1883	355,635	491,093	5,000,616	.....	.....	.....	.....	5,847,344

The total number of poultry for 1887 is over half a million less than in the previous year, but over 100,000 more than in any other year. The number of turkeys and geese is less than in any of the three preceding years, but other fowls show a continuous increase. The West Midland group leads in the number of poultry, followed very closely by the Lake Ontario district.

Live Stock per 1,000 Acres.—The following table shows the number of each of the classes of live stock per thousand acres of cleared land in 1887 :

Districts.	Horses.	Cattle.	Sheep.	Hogs.	Poultry.
Lake Erie	59.0	176.9	116.4	141.5	717.7
Lake Huron	49.6	202.8	140.3	57.8	582.7
Georgian Bay	48.2	171.8	169.2	71.7	555.2
West Midland	51.7	193.8	116.7	73.4	583.2
Lake Ontario	55.5	137.9	95.5	68.3	556.2
St. Lawrence and Ottawa.	47.9	178.9	142.7	57.7	535.4
East Midland	50.1	174.4	122.8	71.3	558.3
Northern districts	36.9	226.7	167.4	56.0	565.5
The Province 1887	51.8	175.4	125.7	75.0	579.6
The Province 1886	52.1	184.5	147.3	78.6	637.1
The Province 1882-7	51.3	175.3	162.2	80.6	577.8

In every instance the figures for the province in 1887 are below those of the previous year, although in the items of horses, cattle and poultry they are slightly in excess of those of the six years average. The Lake Erie district, as usual, leads in the

number of horses, hogs and poultry, the Lake Huron group has the largest number of cattle, and the Georgian Bay counties the largest number of sheep to the 1,000 acres cleared. The Northern districts show up even higher than the Lake Huron group in the number of cattle, and are second in the number of sheep, but as these animals are allowed to run in the bush and natural pastures nearly all summer there is hardly a place for them in a fair comparison. An interesting feature of the above table is the almost uniform figures of the last column, barring those of the Lake Erie district.

FROM THE MAY REPORT.

Wm. T. Shaw, Chatham, Kent: The drouth of 1886 left many of our farmers short of hay, so that many who failed to have a few extra acres seeded down found themselves under the necessity of having to buy long before the winter was over. Under these circumstances the cattle were taught to be not too particular, and spring saw some very hard cases indeed.

Lorenzo M. Brown, South Dorchester, Elgin: Stock of all kinds wintered well. No disease except an occasional case of distemper in horses. There was plenty of fodder and a good deal of hay has been left over. Pasture is already good.

John Meharg, Houghton, Norfolk: All kinds of stock came through the winter very well. I have not heard of any disease. There has been sufficient fodder, with a small quantity left over.

Joseph Martindale, Oneida, Haldimand: Live stock have wintered well; hay and oats being plentiful and cheap. Farmers have been feeding liberally and they find that it pays to do so. Horses are bringing large prices this spring.

James Watson, Moore, Lambton: Live stock are in good condition. Horses are in good demand, and as a consequence are better attended to than usual, being improved as a class in both breeding and appearance. More care has been bestowed in the wintering of cattle, and a corresponding improvement in growth and condition is observable.

W. G. Ritchie, Greenock, Bruce: Live stock are in fair condition. Horses have been affected by a very severe form of distemper, some being threatened with strangulation, but very few died. In some places fodder was very scarce, but farm animals have, as a general thing, pulled through in fair condition.

James Brodie, Artemesia, Grey: The general condition of all kinds of stock is good. This is more especially the case with those that have had warm stables. Farmers are beginning to see that the old plan of letting their animals shift for themselves around the straw stack is played out.

John McPherson, Lobo, Middlesex: The most of the stock has come out well, owing to the fact that the farmers are realizing the benefit they derive from having their stock in good condition to turn on the grass and have them ready for the early market. There has been a scarcity of fodder.

James G. Pettit, Oxford East, Oxford: Live stock of all kinds have come through the winter in pretty fair condition and quite free from disease of any kind. There seems to have been a sufficiency of fodder supply throughout the winter, and of a better quality than usual in consequence of the favorable season for gathering last year's crops.

Thomas Lunn, Oakland, Brant: Live stock of all sorts are in a healthy condition. There have been more losses of cattle for want of proper nourishment and shelter than from any particular disease. Very little fodder changed hands, the majority of farmers preferring to keep their animals on short rations than buy feed for them, and the appearance of cattle hereabouts would indicate that more fodder could have been used with profit.

Thomas Steele, Downie, Perth: There have been many deaths among this year's foals, and many mares have died foaling. I do not remember ever to have heard of so many deaths in one season.

Ralph T. Little, East Flamboro', Wentworth: Pigs have been affected with some disease through which they become crippled and ultimately lose the use of their limbs. The animals afflicted refuse to eat. The disease has resulted fatally in many cases.

John Weylie, Glanford, Wentworth: Live stock look well in most cases, but there are always a few people amongst us who never provide sufficient food or suitable shelter for their stock and, of course, the animals cared for with this system, have barely kept alive during the latter part of the winter and spring.

Colin Cameron, Nassagaweya, Halton: All kinds of live stock are in good condition. There was plenty of hay and coarse grain and, as prices were low, these were fed liberally to farm animals.

Wm. H. Proctor, King, York: Horses have been affected with a disease called, by some, diphtheria, and by others, typhoid fever. It is very contagious. The animals are sick a few hours and then die. The complaint starts with a slight cough which appears to follow down to the lungs and heart, when death ensues.

Wm. Lucas, Cartwright, Durham: All kinds of stock were in fine condition in early spring, but the lateness of the season and want of early grass has had a tendency to keep cattle backward.

Alex. Ritchie, Storrington, Frontenac: Cattle generally are very thin owing to the long cold winter and scarcity of food. It does not pay to have cattle standing in the lee of barns and fences all through a cold winter day instead of having them comfortably housed in warm stables where they can be kept growing right along if properly fed. There has been plenty of fodder when divided up. Hay has been very cheap all winter.

A. Harkness, Matilda, Dundas: The winter was long and severe, but feed was abundant and live stock n general well housed, and they came through in good condition.

James E. Craig, North Gower, Carleton: The condition of stock is very fair notwithstanding the extremely cold winter. No disease among any farm animals, except cattle, that became very poor and then became infested with lice. There was an abundance of fodder throughout the winter.

John Garbutt, Smith, Peterborough: All live stock in good condition. There was a sufficient supply of fodder. There has been a distemper among horses during the winter and spring. It caused a swelling of the throat, and the animals affected failed greatly in flesh.

D. Galloway, Lutterworth, Haliburton: Live stock of all kinds are in good condition. There was plenty of fodder.

James McDonald, Stephenson, Muskoka: The general condition of live stock is not good, as most of the farmers have too much stock for the feed and shelter provided for the animals. Horses are better looked after and are in good condition. Cattle are healthy but thin. Sheep fair. Pigs are above the average. Fodder was scarce.

John Hollingworth, Watt, Muskoka: The condition of live stock as a rule is very fair. Two instances near by of inflammation in horses (one fatal) have occurred, and one of inflammation in an ox. Sheep have come through well, but owing to severe weather, there has been considerable loss of lambs this season. Pigs have come through well, but from various causes. Fodder has been sufficient generally during the winter but is about all used up.

J. M. Ansley, McDougall, Parry Sound: Live stock in good condition, sheep being exceptionally good. There has been a fair supply of fodder.

D. MacFarlane, Foley, Parry Sound: Pigs dropped in March all died, and lambs were weak. I attribute this to the long, hard, steady winter. Fodder gave out about the beginning of April.

FROM THE AUGUST REPORT.

John Buckland, Gosfield, Essex: Pastures are burnt up with drouth. Horses and cattle are in fair condition. We have not much fat stock at present, and it is doubtful if we will have any unless we get rain.

L. E. Vogler, Zone, Kent: Pastures are perfectly bare, and farm animals of all kinds are showing the effects of short forage.

G. M. Baird, Harwich, Kent: Pasture is all burned up with heat and drouth, and many persons have to feed their stock to keep them alive, and if a good rain does not come soon to revive pasture there will be hard times next spring for feed. Dairy produce is greatly reduced in quantity also.

Lewis Simpson, Dorchester S., Elgin: Pasture was good in the early part of the season. Horses, cattle, sheep and pigs are in good condition. Fat cattle are looking well.

D. Campbell, Dunwich, Elgin: Pasture poor. Live stock holding their own but not gaining very much. A good deal of soiling used. Teams that are fed hay and oats are all right; others have to grub for a living. I cannot see that cattle are gaining or losing. Dairy produce shrinking rapidly.

H. J. Barber, Townsend, Norfolk: Pasture is dried up. Stock of all kinds are losing and will have to be fed if the drouth continues. Sheep are scarce in this township. Fat cattle are scarce, and will be if the drouth continues. The milk for the cheese factory has failed about one-half and will fail entirely soon if there is no rain.

W. Hedges, Walpole, Haldimand: Pastures are dried up. All kinds of stock will require to be fed hay almost immediately or they will suffer. As to cows I fear that they will dry up. We sent nearly four hundred pounds of milk to the cheese factory through June and beginning of July. This morning we sent one hundred and eighty from the same cows.

James McClive, Bertie, Welland: Pastures all dried up to a crisp. Live stock look fairly well, but the supply of milk is below the ordinary. Quite enough fat stock for home use. Butter and cheese very scarce and running up in price—butter 25c.; cheese 12½c. wholesale.

H. Ingram, Enniskillen, Lambton: Pastures are completely dried up, in consequence of which stock of all kinds are failing in condition very fast, and in some localities they are suffering for want of water as well as food.

W. G. Willoughby, Brooke, Lambton: Pastures are completely dried up, with no appearance of life in the grass at all, and cattle are suffering.

G. Dewar, Plympton, Lambton: Pastures are almost burnt out, and as a consequence stock of all kinds have suffered to greater or less extent; some are now suffering for want of a sufficient supply of water. As might be expected under these conditions, fat stock is scarce and dairy produce light.

J. Kernighan, Colborne, Huron: Pastures burnt up. Horses in good condition. Cattle healthy. No disease of any kind, but rather thin. Sheep poor. Not many pigs. Not much either fat stock or dairying in this township.

George Fortune, Turnberry, Huron: Pastures were very good in the beginning of the summer, but they are completely burned up at present. All kinds of live stock are in good condition. Very little fat stock on hand, and unless the pastures are good in the fall, dairy produce will be short.

James Johnston, Carrick, Bruce: Pastures have been good this season till within the last three weeks. Stock have done well so far. Horses are generally healthy. Cattle have thriven well. Sheep have done well, and pigs also. Fat stock here are ready for the market, but few have sold yet on account of the low price. Our butter and cheese factories have been well patronized. The cows have dried up considerably on account of heat and drouth.

John Douglas, Arran, Bruce: Pastures in this section are completely burnt up with the drouth and hot sun; nothing like it for some years. Live stock are thin. No fat stock in the hands of farmers at present. Dairy produce very scarce, owing to the unprecedented drouth and hot season.

Daniel Marshall, Derby, Grey: Pasture all burned up with heat and drouth. Horses are looking well. Cattle are thin, and must get worse unless rain comes. Sheep and pigs are in fair condition. The season is not favorable for fat stock or dairy produce; under average.

George Binnie, Glenelg, Grey: Pastures during May and June were excellent, and stock as a consequence gained in flesh, and milk cows done well, but now the pastures are literally burned up, and stock are rapidly losing what they gained. With an early and plentiful supply of rain, fall pastures may yet be good.

J. McArdle, Proton, Grey: This has been a good season so far, for pasture and stock have done well. Horses look well; spring lamb sold well; pigs ordinary; dairy produce is plenty and good.

B. R. Rowe, Orillia, Simcoe: Pastures, except in low lands, are as bad as they can be, and of course the condition of all kinds of stock, excepting horses, must be and is affected by it, horses having to work on, and must be kept up by dry feed. The flow of milk in the early part of the season was good; now, of course, it is failing, though in a measure kept up by the run in the stubble fields.

George Sneath, Vespra, Simcoe: The pastures are as brown as the travelled roads. Timothy is dried up and what clover started has been eaten off by the grasshoppers, consequently cattle and horses on pasture are suffering and the dairy produce considerably reduced.

Wm. Watcher, Dorchester N., Middlesex: Never saw pasture so poor; dried up. Farmers are feeding hay and green corn to their milk cows. Stock is generally thin in flesh where not fed by hand; horses fair; cattle thin; sheep poor. Pigs in good condition which are generally fed the year round. Fat stock scarce. Dairy produce getting less every day; cows dried up one-half.

Rd. Jolliffe, Dorchester N., Middlesex: Pastures are entirely dried up. Fields look brown and barren, in consequence of which live stock of all kinds look poor. Milk at the cheese factories has fallen off fully one-half. Butter scarce and very poor; price, 25 cents.

N. Smith, Oxford W., Oxford: The pastures are completely dried up. Horses are doing fairly well. Cattle are looking well because we have to feed them to keep them up. Dairy produce has fallen off quite 50 per cent. from the early part of the season.

W. Courtice, Fullarton, Perth: During the month of June the pastures were good and all kinds of stock did well, but during the month of July and so far in August the dry, hot weather has parched up the grass and in many cases stock have to be fed. Milk in the factory has fallen off wonderfully since the dry, hot weather has set in.

D. McLean, Ellis, Perth: Pastures are seared brown, and water is scarce, consequently live stock of all grades are thin in flesh, but as yet healthy. Fat cattle and the dairy produce have suffered greatly for the last month.

W. Brown, Guelph, Wellington: Pastures extremely bare, but stock have kept up wonderfully well considering. Milk cows suffered most. (Note that O. A. C. creamery has reduced from 750 to 350 lbs. of butter per day).

Henry Liersch, Wilmot, Waterloo: Pastures very poor on account of long drouth; burned up. Live stock is so far generally in a fair condition, but in some localities, on sandy soil, horses and cattle have to suffer from scarcity of pasture and water.

M. Moyer, Clinton, Lincoln: Pastures are literally parched. The grass is dry and dead, having very little nutriment. The effect of this is shown in the condition of live stock of all kinds. Working horses that have been fed in stall are in good condition. Young horses (colts) one and two years old, and breeding mares, are in many places living examples of the results of dried pastures. Cattle, generally, are not in an average good condition. Many farmers are keeping their cattle up and feeding them. Sheep, generally, are not in good condition. Fat stock is unusually scarce. There is a marked decrease in dairy products. The record of milk received at the factories in this section shows a rapid decrease in quantity.

W. M. Calder, Glanford, Wentworth: Pastures are completely burnt up. Some farmers have to feed their live stock fodder. The dairy produce is by no means abundant. City consumers complain of its scarcity and dearness already.

Wm. Kersey, Toronto Gore, Peel: Pastures are very bare and dried up; there has been no growth since the hay was cut, consequently live stock are very lean unless hand fed with hay and meal.

D. James, Markham, York: Never saw the grass so withered before, fairly brown and top dead; hardly a green blade to be seen.

D. B. Nighswander, Markham, York: Pastures are exceedingly poor, owing to drouth. Horses in very fair condition; cattle rather below medium; sheep very good; pigs in good condition; fat stock scarce and dairy produce scarcer.

R. Forsyth, Pickering, Ontario: Pastures were never so dried up as at present; cattle not doing so well; horses looking very well where stall fed; sheep and pigs looking very well; fat stock, none; butter getting scarce.

W. G. Rundle, Darlingtou, Durham: Pasture is very scarce; fields are as brown as though a fire had passed over them, and stock has suffered on account of scarcity of feed. There is very little fat stock and the very hot weather with poor pasture has had the effect of bringing down the quality as well as quantity of butter.

Jonathan Dunn, Rrighton, Northumberland: The condition of pasture is dry all over; high land looks as if burned over, and on low land the grass is so dry that cattle do not care to eat it. Horses are in fair condition, many owners having kept them up on account of flies and other pests. Cattle are doing well on

dry pasture ; sheep are thin in flesh and lambs are small ; pigs are doing well ; I hear of no disease among them. The produce of cheese will come short of last year in numbers of pounds ; quality good and good prices.

Geo. N. Rose, Marysburg N., Prince Edward : The continued dry weather has ruined pasture, except on low or marshy lands.

Jas. Cooper, Marysburg S., Prince Edward : Pasture very much dried up, still all kinds of live stock look fairly. Dairy produce did well up to present, but there is a decided decrease now.

B. C. Lloyd, Camden E., Lennox and Addington : Pasture lands all dried and parched, but horses, cattle and sheep look splendid ; pigs very good ; not much fat stock. Cheese, the principal dairy product, is in good demand and at remunerative price.

Robt. Anglin, Pittsburg, Frontenac : Pastures dried up, still all kinds of stock are looking well and healthy. There is the usual amount of fat stock. The long continued drouth has very much interfered with the yield of milk, reducing the quantity fully 30 per cent.

J. Ferguson, Wolford, Leeds and Grenville : Never saw the pasture in a worse condition than at present ; the continued hot weather without rain for the last six weeks has entirely destroyed the grass and many are feeding their stock, and will have to do so for some time to come. Cattle have failed lately ; sheep are in fair condition ; pigs looking rather thin—get too much whey—farmers sell off too much of their coarse grain.

A. Harkness, Matilda, Dundas : Pastures were very dry and bare a week ago, but recent rains are improving them somewhat. Stock of all kinds are, I think, in fair condition. There was a very great shrinkage in the milk supply during July, which still continues where cattle are not supplied with green feed. Farmers who have fodder corn have no cause to complain, but all others are praying for more rain.

P. N. Tait, Cornwall, Stormont : Pastures are very short and water very scarce for live stock. No after grass has started yet. Horses, cattle, sheep and pigs have all done well, considering the pastures ; fat stock is in large supply and poor demand ; butter, not very much made here now, nearly all cheese ; milk has decreased from one-quarter to one-third.

A. M. Campbell, Kenyon, Glengarry : Pastures have been good notwithstanding the dry weather. Horses in good condition ; cattle good ; fat cattle have done well, while there has been a heavy flow of milk.

Jos. Kyle, Hawkesbury E., Prescott : In the early part of the season the pastures were excellent and the cattle in good condition. At present, owing to the drouth, the pastures are burned up and cattle suffer. Most all the horses I see in pastures are poor ; sheep the same ; pigs, owing to cheap grain, are in good condition. We have cheese factories all over the township, but there has been a great falling off in the quantity of milk of late.

J. J. Smyth, Gloucester, Carleton : Pastures very bare ; stock lean ; dairy produce falling off.

Jos. Kinder, Brudenell, Renfrew : Pastures have been very good until the last week or so ; they are beginning to dry up fast for want of rain. Horses, cattle and sheep are in good condition. The season until the last few weeks has been very favorable for dairying, as the pastures were good.

Wm. Hawkins, jr., Stafford, Renfrew : The pasture has been excellent until August or late in July ; since then very dry. Horses, cattle, etc., are all in a pretty good condition. Since the dry weather has set in dairy operations are not so good.

A. F. Stewart, Beckwith, Lanark : Pastures extremely bad on account of dry weather. Live stock are generally in fair condition ; fat cattle are hardly able to hold what they put on in the early part of the season ; cows have failed in their milk to about half the quantity ; cheese sells at 10 to 10½ cents for July make.

A. R. Kidd, Dummer, Peterborough : The pasture, at this writing, is almost *nil*, and should the dry weather continue for any considerable time, stock of all kinds will be seriously affected, as well as the dairy interest, which at present seems to be the mainstay of the farmer.

John H. Delamere, Lutterworth, Haliburton : In many places the pasture is dried up very much, but scarcely as bad as I have noticed it at the front ; the bush protects a lot of good pasture, and the live stock are in good condition generally ; horses and cattle look well so far, but continued drouth will affect the cattle ; sheep are scarcely up to ordinary quality, and scarce ; there has been a scarcity of pigs this season also ; fat cattle scarcely up to average ; our dairy produce is usually excellent in quality, but scarcely up to the average in quantity this season.

J. C. Hanley, Tyendinaga, Hastings : Pasture, none growing ; cattle living on old, dry spring grass, browsing on trees, or hand fed. There was plenty of grass in the early part of the season ; cattle, horses, etc., did well then, but are rapidly getting thin now.

A. Wiancko, Morrison, Muskoka : Pastures are dried up. Live stock are in good condition yet ; the forests yielded ample food so far. Cows do not give as much milk as they do when in good pasture.

O. Duross, Oliver, Algoma : Owing to rather a wet season pastures are good. Horses and cattle look well ; only grades. No fat sheep, and pigs in good condition ; we have not many of either.

FROM THE NOVEMBER REPORT.

Arthur J. Arner, Gosfield, Essex : Fall pastures are in good condition, the rains of September doing them incalculable good. Live stock of all kinds are doing well, but very few cattle or sheep fattened. Hogs are not in excellent condition owing to shortage of peas and barley. Fattening has commenced since the corn crop is in. The supply exceeds the demand. The supply of fodder is quite sufficient.

W. G. Morse, Mersea, Essex : Fall pastures are excellent and live stock in fair condition. All kinds of stock are being bought up alive and shipped, principally to Buffalo. Plenty fodder of all kinds.

Geo. M. Baird, Harwich, Kent: Late summer rains started the pasture, making good feed for the fall. Live stock are in good order; a great quantity of fat and stock cattle being shipped to Montreal and other points east; also sheep and hogs shipped to Montreal. There will be a good supply of fodder for winter.

John Haggan, Malahide, Elgin: Pastures have improved much since the rains, and so have stock, which before that were thin. Not much doing in fattening cattle, sheep, etc. Fodder supply for winter very limited.

James Morrison, Walsingham, Norfolk: Fall pastures have been poor; the grass was all dried up in summer. Not many cattle fattening; not much coarse feed to fatten them with; most of the hogs have been sold live weight and sent off. Fodder will be scarce.

W. W. Wells, Woodhouse, Norfolk: Fall pastures are about as bare as the ground could be to be sodded over at all; in fact no pasture at all. Live stock look not so badly, yet by no means in good condition. Fat stock will be scarce. Sheep will be ordinarily plentiful. Hogs fairly plentiful and good. Fodder supply very scarce.

V. Honsberger, Cayuga S., Haldimand: Pastures very short on account of continued drouth, and stock rather thin in flesh as a rule. Not much done in fattening except for family and local use, as beef is low. Very few fattening sheep in the fall; fair progress in fattening hogs. Market supply under an average on account of scarcity of coarse grains. Hay a sufficient supply; coarse grains short.

Wm. Hedges, Walpole, Haldimand: Fall pastures very bare and live stock are poor and thin. No fat stock except stall fed. Hogs are pretty plentiful and pork is cheap. I think after winter commences the supply of meat will fall off because farmers are getting rid of all they can before winter on account of scarcity of fodder. Fodder likely to be scarce.

J. W. Overholt, Wainfleet, Welland: Fall pasture is very scant, hence the condition of stock is poor. Hogs are making better progress towards fattening than cattle or sheep, as the former are enclosed and fed grain while the latter are still on pasture. The supply of fodder for winter is fair.

W. S. Howell, Sombra, Lambton: Fall pastures are short yet there has been a pretty fair growth, but the half-starved cattle were too hungry to let it get ahead much. Live stock of all kinds have gained up pretty well but are scarcely prime. The fattening of hogs is at its height and of cattle just nicely begun. Lots of lean steers are for sale. Coarse grain for fattening is not over plentiful. The fodder and hay crops are a little short and farmers generally feel overstocked with cattle, and would sell quite freely.

Alex. E. Wark, Plympton, Lambton: Pastures are nothing and general run of stock thin, but there will be no trouble in supplying the market. Prospect of fodder supply for the winter not very encouraging, and if winter sets in early there will be a lot of hides on the fence next spring.

Alex. McEwen, Hay, Huron: Fall pastures are in poor condition and consequently cattle are pretty thin for wintering. A great number of cattle have been sold for stockers. There are not many cattle fit for market around here at present. Fodder is fairly plentiful with the exception of hay.

James Mitchell, Howick, Huron: Pasturage very poor; live stock look very well considering the short grass. The fattening of cattle is not so brisk as in past years. The supply is better than the market. Fodder supply short except hay.

G. Edwin Cresswell, Tuckersmith, Huron: Fall pastures are worse than I have seen them for several years, and live stock are low in condition as a rule. Very few cattle will be stall fed this winter, but a very large number will be partially stall fed and then finished on the early grass of 1888 for June, July and August shipment to England. Lambs are sold off in the fall and early winter; few old sheep fattened. Hogs about the ordinary supply. Fat cattle will be scarce for Christmas and winter markets; sheep and pigs much as usual. Fodder will be scarce; farmers are bracing themselves to meet the storm.

John Herriott, Elderslie, Bruce: Fall pastures very bare and live stock rather thin. Good supply for market when fat. Fodder supply short.

Thos. Fraser, Huron, Bruce: Pastures never were worse. Cattle have never gone to the buyers as thin as this year. There is very little winter fattening done here; there will be a very small supply from this township. Sheep all sold in the spring but what the farmers want. Fifty per cent. of the hogs were sent to market on foot. There will be sufficient fodder.

Robt. Carruthers, Artemesia, Grey; Fall pastures are far beyond expectations at harvest. A great number of very fine beeves have been disposed off and a large number are in good order for feeding. Fat sheep are mostly sold. Hogs were mostly all sold on foot for exportation. Prospects for fodder good.

James Shearer, Egremont, Grey: Pastures rather poor. Live stock are in good condition considering the scarcity of pasture. Fat cattle pretty well cleaned out. Lambs all gone. Killing of hogs commenced. Fodder will be scarce.

A. Stephen, Sullivan, Grey: Owing to the continued drouth pastures were burned up; the fall rains came too late to be of any considerable benefit. Live stock rather lean, and owing to the poor pasture a larger quantity than usual will be stall fed. The supplies for market will be ample. Fodder in many cases will be scarce.

James Farney, Flos, Simcoe: Owing to drouth pastures are not so good as usual, although the cattle are in good condition; plentiful supply of fodder. Hogs are all sold to shippers only what is wanted for home consumption.

Basil R. Rowe, Orillia, Simcoe: Fall pastures have latterly assumed a green tinge. Cattle are in poorer order than I have known them for years. A good deal of fodder has been already used. Many cattle are being exported which will help to lessen the quantity required.

Malcolm Campbell, Ekfrid, Middlesex: Fall pastures have vastly improved by late rains. Live stock where water is plentiful are doing well, but where stock have to be driven a distance for drink they are not in good condition. Fat cattle, sheep and hogs are all marketed, the latter at good prices; cattle about one-fourth lower than formerly. About enough fodder for winter.

C. A. O'Malley, Mosa, Middlesex: Fall pastures very good and live stock fair. Hogs nearly all fattened, or sold half fattened, owing to the short corn and pea crop. Prospects for fodder supply fair, most farmers have reduced their stock to near a minimum.

James Anderson, Zorra E., Oxford: No pasture for three months past worth mentioning. Stock are thinner than usual, especially cattle. Sheep and hogs are better than some time ago, especially since cool weather set in. Supplies of cattle, sheep and hogs will be smaller than usual. There will be no fodder to spare if the winter is an ordinary one.

R. Francis, Fullarton, Perth: Pastures have been poor; they had a brown appearance and cattle for beef did not come up to the wants of buyers; still, they are mostly gone. Some are being held over for stall feeding. Sheep for sale are mostly gone and hogs the same. More hogs still feeding for market. There is sufficient fodder for winter.

Thomas Moffatt, Logan, Perth: Pastures bare; they never recovered from the excessive drouth. Grass beef nearly all sold; very little stall feeding in this section. Fat sheep all sold out, and hogs all disposed off lean to the cheese factories. Fodder is expected to be short on account of having to start feeding a month earlier than usual.

Chas. Nicklin, Pilkington, Wellington: No pasture since August, and stock, except with those that have been feeding for the last two months, absolutely poor. Except hogs not much feeding for flesh done yet. Roots scarce and prospectively a long feeding season ahead. Feed not superabundant except hay and straw.

H. McDiarmid, Puslinch, Wellington: There is scarcely any pasture. Sheep can make a living on it, but it would scarcely support anything else. Live stock thin; very little fattening has been done yet with the exception of hogs which are now being fattened. Prospect of a fair market supply, but below the average. Fodder will be scarce and as it is fed already.

Christian T. Groh, Waterloo, Waterloo: Fall pasture never was so short for years—no pasture at all. Stock in poor condition; were fed for over a month; farmers's stock will be too heavy for the quantity of feed. No feeding of cattle or sheep for market yet. Some hogs are feeding for home use. There will not be one-third the stock fed this winter that there usually is. The fodder supply is scarce.

Benj. Devitt, Waterloo, Waterloo: Pastures poor. There will not be as many cattle fattened as last year, prices having been too low and stock not in such good condition as formerly. Some farmers are doing more in hogs than in former years. Fodder seems to be plenty especially hay which was well saved.

John Short, Luther E., Dufferin: Pastures rather bare and dry but stock in fair condition. There will be a good supply of butchers' cattle (two year olds) and sheep. A surplus of hay and coarse grain.

John Cornelius, Garafraxa E., Dufferin: Pasture not of much account. Stock in fair condition; no progress in fattening cattle as yet. I think there will be quite a supply for winter market. Plenty of feed for the winter.

W. H. VanDuzer, Grimsby N., Lincoln: The fall pasture is completely dried up, and live stock is in very poor condition for wintering. The prospect is that fat stock of all kinds will be very scarce after Christmas as I hear of no one feeding or going to feed anything excepting a few hogs. I think the supply of fodder is good what there is of it, but very scarce.

Robt. Inksetter, Beverley, Wentworth: There is scarcely such a thing as fall pastures; cattle live partly on straw and partly by picking the dead grass in the fence corners, and their condition is as poor as their pasture. The quantity of fodder is small but the quality is good.

Adam Alexander, Nassagaweya, Halton: Fall pastures very poor; quite a number have been compelled to feed their stock to keep them from losing flesh. Most of the small farmers are selling off all the young stock at all fit for the butcher. Those who intend to feed have not housed them yet. Sheep are scarce; not considered a paying stock. Hogs for market will be slaughtered soon; few will keep them longer owing to a scarcity of pease. Fodder will be scarce.

F. J. Sleightholm, Toronto Gore, Peel: There is not, strictly speakfng, such a thing as fall pastures and as a result all live stock except housed animals are in very low condition. Supply for the market likely to be short and the quality poor. Fodder supply is also likely to be short enough.

J. Bartholomew, Whitchurch, York: Pastures have been poor I might say all summer, and fall stock in general look thin. Some farmers have been feeding stock for some time back as the pastures have not been sufficient to keep them alive Of feed generally there is a pretty good supply; straw plentiful.

Alex. McGregor, Reach, Ontario: Fall pastures were very poor; cattle in general are in a poor condition. Cattle and sheep are not fattened much here until winter. Hogs are nearly all fat and killed off in November. There will be a sufficient supply of fodder.

Wm. Windatt, Darlington, Durham: Pastures dried up and live stock in poor condition; large supplies of lean cattle for market; fodder supply must be short.

Robt. Colville, Clarke, Durham: Pastures poor—not much growth; live stock leaner than former years. Prospect of market supplies unfavorable from scarcity of feed. Fodder supply may tide us over the winter with care and proper management.

Walter Riddell, Hamilton, Northumberland: Fall pastures very poor. Though live stock have done well considering the pasture they will not be in as good condition for winter as usual. Not much fattening at present except hogs. Supply sufficient for local use and some for export. The crop of hay and straw was light, but all got in good condition. Fodder will be scarce.

Franklin Jones, Hillier, Prince Edward: Fall pastures very poor, but improving now; live stock thin but improving; little attention paid to fattening. There will be a plentiful supply of inferior or half fattened stock. Fodder will undoubtedly be scarce.

R. G. Girvin, Amherst Island, Lennox and Addington: Pasture is improving now, having had fine rains lately; dry all summer. Fodder will be scarce and farmers are thinning out stock. Beef low priced.

Geo. Lott, Richmond, Lennox and Addington: Fodder is generally scarce but so many cattle have been sold to American buyers that there will probably be a sufficiency of feed.

Robt. Anglin, Pittsburg, Frontenac: Pastures at present are middling fair. Live stock in general are thin; not much doing in fattening stock of any kind except pigs which are being considerably bought up alive for Montreal market, at 4¼ to 4½ cents per pound. Feed for cattle will be scarce; a great many are reducing stock principally by killing for beef and selling off horses, for which they find a ready market at reasonable figures.

Thos. Tapping, Barrie, Frontenac: Pasture very short; live stock in good condition; supplies all sold to lumbermen. Fodder for the winter likely to be very scarce as considerable marsh hay was destroyed by fire.

Gedeon Fairbairn, Edwardsburg, Leeds and Grenville: Fall pastures very much dried up, but cattle notwithstanding the drouth are in fair condition. Very few cattle and sheep fattening. A great many hogs have already been shipped for the Montreal market. It is expected that fodder will be scarce.

R. G. Murphy, Crosby S., Leeds and Grenville: Fall pastures very poor. Live stock going into stables in poorer condition than former years; very little stall feeding of cattle or sheep will be done by the farmers this winter. Hogs will maintain their usuel numbers owing to the good yield of corn. The supply for market of fat cattle and sheep will be less than usual. Fodder short.

Donald F. McRae, Roxborough, Stormont: Pastures very dry and bare, and cattle very thin in flesh. Very little fattening done yet; grass fed cattle sold to butchers as best they could. Milch cows are well fed. Sheep and hogs are extra good. With grain cheap there is prospect of a large supply toward New Years'. Supply of fodder would be sufficient but for the shipment of pressed hay.

James Cattanach, Lancaster, Glengarry: Fall pastures are in poor condition on account of cold weather setting in before we had sufficient rain. Very little stock fattened here except hogs.

Paul Labrosse, Hawkesbury E., Prescott: Fall pastures poor—too dry; live stock in good condition but not fat. Traders send a quantity of live stock to Montreal market—bought from farmers. Fodder sufficient and a surplus.

Alfred Hill, Cumberland, Russell: Pastures very dry and bare of grass. Stock seem to be fair, but not much for fattening on account of scarcity of roots. Fodder supply will be scarce as people are feeding already.

Lewis Morton, Goulbourne, Carleton: Fall pastures could not be much worse than they have been since about the first of August. Stock in poor condition. Fattening cattle have not much more than held their own since August; sheep have done a little better. A good supply of cattle for market such as they are; some tolerably good. Fodder for winter ample.

Florence McCarthy, Rolph, Buchanan and Wylie, Renfrew: Pastures very bare; live stock average. There will be abundance of fodder for winter.

A. F. Stewart, Beckwith, Lanark: Fall pastures very bare, a great many have been feeding their stock for some time. Stock of all kinds look well, considering the pasture. Fodder will be pretty scarce if we have a long winter, but all are taking good care of what they have and securing all they can.

Wm. Paterson, Ramsay, Lanark: Fall pasture there is none; stock are already on their winter feed. Hogs are nearly all sold. Hay is, or rather was, plentiful, but hundreds of tons have been destroyed by bush fires. Other fodder is scarce.

Wm. Maxwell, Laxton, Digby and Longford, Victoria: Between the dry season and fires there is no pasturage; people are hand feeding their cattle. Prospect for supplies for market very limited, and prospects of fodder supplies could not be worse as a good many lost all by fire.

H. Spence, Dummer, Peterboro': Pastures are short, and owing to that and scarcity of water stock in general are thin. The scarcity of winter feed has driven a great many of the farmers to crowd their surplus stock on the market at any price.

John Moloney, Douro, Peterboro': Fall pastures are in a wretched condition; there has been scarcely any growth of grass since about the first of July. Live stock are very thin except where hand fed during September and October; there are no fat cattle except what have been hand fed. Cattle are healthy but thin. Sheep are in fair condition, but snuffles are prevailing amongst them. Hogs in fair condition and healthy. There will not be much of a meat supply for market, as stock will not be fatted to heavy weight owing to scarcity of feed. Fodder supply for winter will be very short.

Alex. Southworth, Cardiff, Haliburton: Pastures are very poor on account of great drouth. Since harvest the woods, which generally make a good run for cattle, have been devastated by bush fires. There will be plenty of fodder for home consumption and some to spare.

Geo. A. Bartlett, Monteagle, Hastings: Fall pastures very bare; have to feed stock one month earlier than usual. Live stock of all kinds low in flesh, except hogs which are fair. The fodder supply will, I think, be sufficient for all purposes.

A. Wiancko, Morrison, Muskoka: Fall pastures improved somewhat after late rains. Stock are in good healthy condition, although leaner than other years; very few are fattened. Supply plentiful but no market. Plenty of fodder; hay was a good crop; straw is very good—bright in color and plenty of it.

O. Duross, Oliver, Algoma: Pasture has been good. Stock looking well; not many fattened for market; hogs only for home use. Plenty of fodder for the winter and some hay to spare.

THE DAIRY INDUSTRY.

The dairy industry of the province is recovering from the depression caused by the fall of prices in 1885 and 1886; yet the number of factories and creameries has not materially increased. As in almost every branch of agriculture in 1887, the production of cheese and butter was affected by the long season of drouth, which was especially noticeable in the high price of butter during the autumn months.

CHEESE.—Although during the latter part of 1886 considerable progress was made towards recovering from the severe depression of the cheese market consequent upon the large production and weak demand of 1885, yet the improvement began too late in the season to permit of its being restored to its normal condition. During the past year, however, still further advance has been made, and though the number of factories in operation has been decreased to a certain extent, those that have been working have been well patronised. The confidence of dairymen in the industry has been regained. The total amount of production exceeds that of 1886 by nearly two million pounds, and the prices realised have been greater than in any of the four preceding years. Thus, on the whole, last year's operations have been very encouraging both to manufacturer and farmer, and it is likely that, owing to the ever-increasing demand for Canadian cheese in the foreign markets, still higher prices, even with a greater production, may be obtained. The following table shows the estimated total amount produced for each year since 1883, based on the returns of factories received, and also the average for the five years 1883-7:

Year.	No. of factories in operation.	Quantity of—		Value of cheese.	Value of cheese per lb.	Milk required to make 1 lb. of cheese.	Value of product of 100 lb. of milk.	Average per factory of—		
		Milk used.	Cheese made.					Milk used.	Cheese made.	Value of cheese.
		lb.	lb.	$	cts.	lb.	cts.	lb.	lb.	$
1887...	737	691,934,579	65,638,656	6,918,913	10.541	10.542	100.0	938,853	89,062	9,388
1886...	770	654,703,243	63,721,621	5,893,818	9.249	10.274	90.0	850,264	82,755	7,654
1885...	752	733,437,254	71,209,719	5,781,569	8.119	10.300	78.8	975,315	94,694	7,688
1884...	751	685,964,727	66,939,573	6,998,889	10.456	10.248	102.0	913,402	89,134	9,319
1883...	635	539,696,197	53,513,032	5,589,339	10.445	10.085	103.6	849,915	84,272	8,802
1883-7.	729	661,147,200	64,204,520	6,236,506	9.713	10.298	94.3	906,923	88,072	8,555

This estimate shows a decrease of 33 in the number of working factories since last year, but part of this is due to the omission of certain private concerns which were before included. It will be seen that the total amount of milk used is greater than in 1886 by 37,231,336 pounds, that the amount of cheese produced is correspondingly increased by 1,917,035 pounds, and the total value of the product by $1,025,095. It is interesting also to compare the value of the product of 1887 with that of 1885, the former being the greater by $1,137,344, although the quantity of cheese produced was less by 5,571,063

pounds. It would appear that the number of pounds of milk required to make a pound of cheese is increasing with the years, there being a difference of .268 pound between 1886 and 1887, and of .457 pound between 1883 and 1887, but the value of the cheese obtained has increased at a relatively more rapid rate, for while 100 pounds of milk brought $1 in 1887 it brought only 90 cents in 1886. The average amount of cheese produced per factory is greater than in 1886 by 6,307 pounds, but less than in 1885 by 5,632 pounds; on the other hand the average value of the product of each factory in 1887 is greater than in any preceding year, though that of 1884 approaches it very closely, being less by only $69.

The number of factories making complete returns is still far below what is desirable, 169 out of the 628 having neglected to give full statistics; yet the following calculations, based upon the data obtained from the returns of 459 factories may be accepted as representing with tolerable accuracy for the whole province the average number of patrons of each factory, the number of cows supplying milk, the value of the product of each cow, and the return for each patron:

Year.	No. of factories returned.	Quantity of—		Value of cheese.	No. of patrons.	No. of cows.	No. per factory of—		Average per cow.			Av. return for each patron.	Av. No. of days worked.
		Milk used.	Cheese made.				Patrons.	Cows.	Yield of milk.	Product of cheese.	Value of product.		
		lb.	lb.	$					lb.	lb.	$ c.	$ c.	
1887..	459	450,513,282	42,833,449	4,515,188	27,679	165,710	60	361	2,719	258.5	27 25	163 13	156
1886..	455	404,036,443	39,361,482	3,646,564	23,244	146,325	51	322	2,761	269.0	24 92	156 88	156
1885..	433	436,335,359	42,479,047	3,446,514	26,300	154,824	61	358	2,818	274.4	22 26	131 05	157
1884..	445	426,260,665	41,595,027	4,357,208	24,015	158,366	54	356	2,692	262.7	27 51	181 44	159
1883..	385	327,353,679	32,495,811	3,396,882	19,797	117,577	51	305	2,784	276.4	28 89	171 59	156
1883-7	435	408,899,886	39,752,963	3,872,471	24,207	148,560	56	341	2,752	267.6	26 07	159 97	157

The average number patronising each factory is larger by nine than that of 1886 and almost equals that of 1885, and the number of cows per factory is greater than in any former year. But each cow gave on an average 42 pounds of milk less than in the year before, the number of working days of the factories being the same for each year. The 2,761 pounds of milk, which represents the average yield of a cow in 1886, made 269 pounds of cheese, and at least a proportionate cheese product might be expected from the 2,719 pounds of the cow of 1887, which would be 264.9 pounds. But the average product of cheese per cow is only 258.5 pounds, thus showing that not only has the milk given by each cow decreased in quantity but also that there has been a deterioration of the cheese-producing qualities of the milk itself. Both results may reasonably be attributed to the long continued drouth of last summer. The advance in the price of cheese was fortunately more than sufficient to make up for the decreased quantity and poorer quality of the milk, and we find that the value of the product for each cow is larger by $2.33 than in 1886, and by $4.99 than in 1885, although not quite so great as in 1883 and 1884, when higher prices ruled in the market. The average return to each patron was $6.25 better than in 1886.

The averages given in the foregoing tables are for the province as a whole, but there are many points of interest in the statistics for the counties of the principal cheese-making districts, as will be seen from the following table:

Western.	No. of days worked.	No. of cows.	Milk used.	Yield of milk per cow per—		Cheese made.	Value of cheese.
				Season.	Day.		
			lb.	lb.	lb.	lb.	$ c.
Elgin	176	4,876	14,826,070	3,041	17.3	1,376,566	144,969 02
Norfolk	148	3,609	8,887,737	2,463	16.6	838,446	85,125 40
Lambton	150	3,796	10,477,259	2,760	18.4	973,109	98,877 07
Huron	144	4,706	12,983,460	2,759	19.2	1,210,418	128,382 52
Bruce	137	5,285	13,529,775	2,560	18.7	1,260,177	130,662 90
Middlesex	169	14,277	42,806,271	2,998	17.7	3,976,860	416,158 57
Oxford	180	15,882	51,319,832	3,231	18.0	4,813,465	504,699 85
Perth	154	8,539	22,275,364	2,609	16.9	2,088,692	222,595 46
Wellington	133	4,550	11,821,903	2,598	19.5	1,110,174	113,346 79
Totals and averages.	161	65,520	188,927,671	2,884	17.9	17,647,907	1,844,817 58
Eastern.							
Northumberland	156	5,545	15,761,715	2,843	18.2	1,501,227	161,566 34
Prince Edward	142	3,643	8,723,132	2,394	16.9	838,283	86,714 88
Len. & Addington.	159	5,948	15,581,528	2,620	16.5	1,483,229	153,043 82
Frontenac	148	5,644	13,599,275	2,410	16.3	1,301,372	134,828 17
Leeds & Grenville	160	26,990	72,695,525	2,693	16.8	7,041,005	753,434 37
Lanark	143	4,431	10,592,411	2,391	16.7	1,034,654	109,890 93
Peterborough	151	2,519	7,494,331	2,975	19.7	706,503	77,115 53
Hastings	161	12,575	36,694,438	2,918	18.1	3,626,261	391,218 07
Totals and averages	157	67,295	181,142,355	2,692	17.1	17,532,534	1,867,812 11

The county of Peterborough shows the highest average daily yield of milk per cow, being 19.7 pounds, Wellington and Huron coming next with 19.5 and 19.2 pounds respectively. These, it will be observed, are the only counties in which the quantity reaches 19 pounds. In the county of Frontenac it falls as low as 16.3 pounds, and the total averages for both east and west are lower than in previous years. The number of cows in the 204 eastern factories exceeds that in the 135 western by 1,775, but the total amount of milk used in the latter district is greater by 7,785,316 pounds. Of this 4,693,855 pounds is to be accounted for by the fact that the working season was four days longer in the west than in the east. The larger quantity of milk and longer milking season is not, however, accompanied by a correspondingly large cheese product, it being greater by only 115,373 pounds, thus showing that the milk of the eastern cow is still better for cheese-making purposes; and further, while the 17,647,907 pounds of western counties cheese is valued at only $1,844,817.58, the 17,532,534 pounds of eastern cheese is valued at $1,867,812.11. Doubtless the higher price would not have been obtained had not the product been of superior quality. The eastern dairymen employed several experienced men during last season for the purpose of visiting the various factories and giving practical instruction in the art of cheese-making, and they cannot fail to be well pleased with the successful result as shown by the prices realised.

It may be worth while to introduce here a table which shows the comparative results in the western and eastern districts during the past five years. The districts mentioned

include only those counties enumerated in the preceding table, and the figures for 1887 are based on the complete returns of 135 factories in the west and 204 in the east.

Year.		No. of factories.		Average per factory of—					Yield of milk per cow per—		Product of cheese per cow per—		Value of product per cow per—			Av. No. of days worked.
		In operation.	Complete returns.	Milk used.	Cheese made.	Value of cheese.	No. of patrons.	No. of cows.	Season.	Day.	Season.	Day.	Season.		Day.	
				lb.	lb.	$			lb.	lb.	lb.	lb.	$	c.	cts.	
1887..	Western	213	135	1,399,464	130.725	13.665	86	485	2,884	17.9	269.4	1.67	28	16	17.5	161
	Eastern.	302	204	887,953	85,944	9,156	49	330	2,692	17.1	260.5	1.66	27	76	17.7	157
1886..	Western	218	127	1,298 550	123,877	11,946	73	442	2,938	18.0	280.3	1.72	27	03	16.6	163
	Eastern.	319	184	863,055	85,828	7,585	46	311	2,772	17.8	275.7	1.77	24	36	15.6	156
1885..	Western	227	138	1,276,794	121,995	10,193	76	424	3,009	18.6	287.5	1.78	24	02	14.9	162
	Eastern.	283	176	970,565	96,084	7,553	53	348	2,786	17.4	275.8	1.72	21	68	13.6	160
1884..	Western	233	143	1,221,198	116,609	12,631	72	416	2,934	17.9	280.1	1.71	30	34	18.5	164
	Eastern.	277	171	964,416	96,422	9,852	47	350	2,752	17.3	275.2	1.73	28	11	17.7	159
1883..	Western	223	126	1,118,022	108,328	11,562	69	385	2,905	18.3	281.4	1.77	30	04	18.9	159
	Eastern.	234	146	800,167	81,591	8,292	43	297	2,694	17.3	274.7	1.76	27	92	17.9	156
Average 1883-7	Western	223	134	1,263,909	120,389	12,005	75	431	2,933	18.1	279.3	1.72	27	85	17.2	162
	Eastern.	283	176	899,550	89,258	8,500	48	328	2,742	17.4	272.1	1.72	25	91	16.4	158

While the number of factories in operation in the west is considerably less than in the east, still the individual factories are obviously larger, as is seen by the statistics. The average daily product of cheese per cow for 1887 is very nearly equal for the two districts, the western having a slight advantage over the eastern, but it makes nearly 9 lb. for the season. The value of the product of the western cow per day has always been greater than that of the eastern until the past year, and this change, as already intimated, is doubtless brought about by the influence of the recent instruction given to eastern manufacturers. The western cow returned 40 cents more to its owner in the whole season, but this was due to the greater number of working days.

The comparison may be carried still further by looking at the amount of milk required to make a pound of cheese and the value of the cheese per pound in the two districts during the several years, as in the following table :

Year.	Milk used to make 1 lb. of cheese.			Value of cheese per lb.			Value of product of 100 lb. of milk.		
	Western.	Eastern.	Per cent. ratio of East to West.	Western.	Eastern.	Per cent. ratio of East to West.	Western.	Eastern.	Per cent. ratio of East to West.
	lb.	lb.		cts.	cts.		cts.	cts.	
1887.....	10.7054	10.3318	96.5	10.4535	10.6534	101.9	97.65	103.11	105.6
1886.....	10.4828	10.0556	95.9	9.6433	8.8370	91.6	91.99	87.88	95.5
1885.....	10.4660	10.1012	96.5	8.3550	7.8610	94.1	79.83	77.82	97.5
1884.....	10.4732	10.0020	95.5	10.8317	10.2173	94.3	103.42	102.15	98.8
1883....	10.3207	9.8077	95.0	10.6728	10.1632	95.2	103.41	103.63	100.2
1883-7...	10.4985	10.0781	96.0	9.9721	9.5224	95.5	94.99	94.49	99.5

In the eastern district the value of the product of 100 pounds of milk has risen from 87.88 cents in 1886 to 103.11 cents in 1887, a difference of 15.23 cents, while in the west

it rose only 5.66 cents. The per cent. ratio of east to west is now 105.6, being much higher even than in 1883. The eastern factories have always been able to make a pound of cheese from less milk than those in the west, and at last they have succeeded in getting a higher price for their product. For the whole five years the average price obtained per hundred pounds is half a cent greater in favor of the western cheese, whereas for the last year it is nearly five and one-half cents in favor of the eastern article.

BUTTER.—There has been a net decrease of five in the number of creameries, leaving a total of 42 in operation. Of these 35 have reported, but only 25 have made complete returns of all items in the schedule, and two of these are returned as manufacturing cheese as well as butter. The average number of patrons per creamery last year was 109 against 82 in 1886, and the number of patrons to each establishment making both butter and cheese has risen from 48 to 51. The milk of 10,758 cows was supplied to the 23 creameries which reported in full, giving an average of 468 cows per creamery as compared with 379 in 1886. It must of course be remembered that these figures are to be regarded as giving only an approximate estimate, inasmuch as it is almost impossible to strike an absolutely correct average owing to the fact that the number of patrons and cows to each creamery must necessarily vary to a considerable extent at different times of the season; still as the reports have been fairly representative and have been compiled with great care, the estimate made cannot fail to be very nearly correct. The amount of butter made at the creameries in 1887 was 857,218 pounds, against 616,054 pounds in the preceding year—an increase of 241,164 pounds. The value of the product per cow for the season was greater than in any previous year with the exception of 1883. The number of working days was the same as in 1886, and the average price received was higher by nearly one cent per pound.

In the following table is given the statistics for the last five years, compiled from the returns of creameries giving in full the information asked for by the Bureau:

Butter making.	No. of returns.	Av. No. of—		Quantity of—		Value of product.	Value of product per cow per—		Av. date of—		Av. No. of days worked.
		Patrons.	Cows.	Butter made.	Cheese made.		Season.	Day.	Opening	Closing.	
				lb.	lb.	$	$ c.	cts.			
1887	23	2,510	10,758	857,218	.....	173,951	16 17	12.65	May 16	Oct. 15	128
1886	20	1,642	7,580	616,054	.....	120,466	15 89	12.41	" 19	" 16	128
1885	8	671	3,490	272,972	.....	54,011	15 48	11.16	" 14	" 25	139
1884	5	335	1,591	118,288	.....	25,717	16 16	13.71	June 3	" 20	118
1883	5	281	1,140	94,883	.....	19,619	17 21	14.50	May 21	" 9	119
Av. per creamery 1883-7	....	89	403	32,122	.....	6,455	16 03	12.49	May 18	Oct. 17	128
Butter and cheese making.											
1887	2	102	606	31,645	92,812	15,383	25 38	17.27	May 9	Oct. 25	147
1886	2	95	525	31,242	96,156	11,832	22 54	14.54	" 1	" 31	155
1885	2	101	606	27,873	126,591	13,402	22 11	14.36	" 3	" 26	154
1884	3	205	1,000	29,636	259,688	37,156	27 16	17.84	" 7	" 26	152
1883	3	95	803	56,930	134,446	23,609	29 40	18.50	" 1	Nov. 1	159
Av. per creamery 1883-7	....	50	295	14,777	59,141	7,615	25 81	16.81	May 4	Oct. 28	154

In the two combination creameries which reported in full, the amount of butter made was somewhat greater than in 1886, but less of cheese, the total value of the product in

1887 being $15,383 against $11, 832 the year before. The combined industries are also able to point to an increased number of patrons and of cows supplying milk, and the value of the product per cow for the season has been bettered to the amount of $2.73. The season on the average lasted 147 days, and was thus shorter than usual.

Contrary to the usual custom of gathering the cream alone, we have reported five creameries which collect the whole milk, 2,455,702 lb. being used to produce 97,810 lb. of butter worth $20,356. This gives an average of 25.1 lb. of milk to a pound of butter and the butter product of 100 lb. of milk as worth 82.9 cents. In two combination creameries 1,241,097 lb. of milk was collected, the product of which was 24,516 lb. of butter valued at $5,238, and 93,915 lb. of cheese valued at $7,617. By this method 100 lb. of milk realised 103.6 cents, an increase over the creamery result of about two cents a gallon, an approximate value for the skim milk. The product of 100 lb. of milk by the cheese factories was shown to be 100 cents, being 3.6 cents less than by the combined butter and cheese method. The returns from the latter are so meagre, however, that the comparison cannot be considered complete.

In table xiii will be found the statistics for all the creameries, showing by county municipalities the quantity and value of butter made. The average price of butter realised in 1887 was nearly three-quarters of a cent per pound more than in 1886.

The Favorite Milch Cow.—The question put to correspondents upon this point was: "What breeds or grades of milch cows are in greatest favor or give the best results?" The replies were sufficiently varied to indicate that the Canadian farmer has not yet settled the question in favor of any particular breed or grade, although there appears to be a steady tendency towards breeds or crosses of the better milking strains, such as Holsteins, Jerseys and Ayrshires. Durhams and their grades are by far the most popular at present, a number of correspondents pointing to the fact that not only have Shorthorns and their grades good milking qualities, but that the animals are also valuable for beef when their milking days are over. Several correspondents plainly state their preference for the common Canadian cow, or the "native" with a dash of the Durham in her, as she is hardy, is a fair milker and does not require the careful treatment and feeding of the fancy breeds of dairy cows. Nevertheless, the fact appears that as a section makes a specialty of dairying in either butter or cheese, an improvement of the stock is at once sought by the introduction of some of the better milking strains. While in western Ontario the Durhams and their grades are most popular on account of their milking qualities and their fitness for fattening for the cattle market, in the counties along the St. Lawrence, noted for cheese-making, the Ayrshire has been steadily making her way as a favorite, and is giving such satisfaction that a majority of our correspondents from that portion of Ontario appear to prefer the Ayrshire and its grades to any other for the dairy. Holsteins are being introduced both in the east and in the west, but their introduction is so recent that a sufficient time has not elapsed for Canadians to pronounce upon them as suited to the average Canadian dairy farm. Jerseys are highly spoken of by correspondents as milkers, but the Jersey cow is preferred for butter rather than cheese-making on account of the richness of the milk and cream. Herefords, Galloways, Devons and Polled Angus are named by some, but their milking and other qualities do not appear to be of such a character as to render them popular in the dairying counties of the province. The popularity of the Shorthorn will not be decreased by the result of recent public tests in the counties of Peterborough and Hastings. In a test under the auspices of Peterborough Central Fair, held in the town of Peterborough, the judges awarded the prize to Shorthorn grades as against pure-bred Holsteins; and at the Quinte fair, held in the city of Belleville, a Shorthorn carried off the prize for the best milker.

FROM THE NOVEMBER REPORT.

James H. Brown, Colchester S., Essex: There are no cheese factories or creameries in this township, but a large quantity is made by farmers. Grades of all the breeds are about equally represented. I think the Ayrshires gives the best results. A few prefer the Galloways.

John Buckland, Gosfield, Essex: The state of the dairy industry is very unsatisfactory, especially butter. In the first place very few farmers have the necessary conveniences for setting milk and keeping butter during the hot season. What we really need is that if we dairy at all we should have good appliances, make a first class article, and keep until we can get a good price. There is no reason why a dairy say of 10 to 12 cows, well managed, should not be able to hold its own with any creamery. The creamery would have some advantages in its favor, while the dairy would also have certain advantages. Then butter would be sought after.

Geo. M. Baird, Harwich, Kent: The dairy industry received a severe blow from the extreme dry and hot weather. There are two cheese factories and one creamery in the township, and so far the former have been the favorites with the people. The most popular cow for milk here is the grade having a mixture of Durham and Devon.

David Newton, Dorchester S., Elgin: The dairy is a very profitable branch of farming in this township. Cheese-making is the principal branch, as the butter is made chiefly for home consumption. We have not many thoroughbred cattle in the township. Durhams are mostly preferred.

Dugald Campbell, Norwich, Elgin: The state of the dairying interest at present is reasonably good. Taking the township all over the production of butter and cheese is pretty equally divided. We prefer the old Canadian cow. I am aware of the fact that breeders of high stock will scoff at this, but the fact stands the same for butter or cheese. Use her well, and you will have nothing that will excel the old Canadian.

W. W. Wells, Woodhouse, Norfolk: We are all cheese in this township, except that butter is made for local wants. The make of cheese has been about half the usual output, say about 150,000 lb. of cheese. I consider the Durham best for milk. There are some Holsteins here, but not many; they are considered by some as superior to the Durhams.

V. Honsberger, Cayuga S., Haldimand: The dairy production has been below an average on account of the drouth. About two-thirds of the milk of the township is made into cheese, and about one-third into butter. Durhams and Durham grades are, I think, in greatest favor for general purposes; but for purely dairying purposes Holsteins are perhaps in greatest favor and give the best results.

Cranmer Riselay, Bertie, Welland: Butter-making is not carried on very extensively in this township as compared with cheese. Holsteins and Jerseys are being introduced, but the principal breed at present is the grade Durham.

James Thompson, Warwick, Lambton: The butter industry has been good this summer, but there was not much of it owing to the want of pasture. I think cheese pays better than butter only for one thing: You cannot raise such good stock if you send your milk to the factory. Durham grades are in most favor.

Alex. E. Wark, Plympton, Lambton: The summer has been pretty tough on the dairy industry. Cows dried up early on account of no pasture and a scarcity of water. What fools farmers are when they don't plant a little fodder corn to keep up the flow of milk during the dry months. Butter factories have run the cheese factories down to a very small thing, and we must certainly go into the butter business if we want to do anything in the stock line. The cream gathering system takes the lead in this part, and to try and give satisfaction under any other system is useless. The common Canadian cow is the best.

W. S. Howell, Sombra, Lambton: Our cheese factory and the Wallaceburg cheese factory are both well patronized. There is no creamery. Butter has ranged from 14c. in spring to 25c. at the height of the drouth, and to 18c. now in October. August milk at the factory gave 85c. per cwt. net cash, which is considerably ahead of butter traded out at the groceries. The run of cows are scrubs with a strain of Durham, and the more the Durham blood prevails as a rule there is the less milk. Grade bulls are generally used, selected from the best milking cows. We have only a few thoroughbred Durham bulls. There is a Jersey bull and a Holstein calf in this vicinity.

Robt. Currie, Wawanosh E., Huron: The dairy industry is gaining in this township. There are a number of butter factories around here, and the price this year is better than it has been for some time, which is stimulating the factory business. Cheese factories are doing well and have many patrons. The cheese will realize the most money for a given quantity of milk, but many prefer the butter factory as the milk is kept for home use.

Frank Morley, Usborne, Huron: Farmers here are just beginning to make more of a specialty of the dairy industry. Cheese has kept the lead, although our creamery was very well patronized during the past summer. Every year less milk is being manufactured into butter on the farm. High grade Durhams have been taking the lead, but many think a Holstein cross would improve their milking qualities.

G. Edwin Cresswell, Tuckersmith, Huron: Considering the dry summer the creamerymen have done well, and prices have and are ruling high. Butter production appears to be running ahead of cheese. Several cheese factories have been converted into butter factories of late. The grade Durham is the cow of this township, and on the whole gives satisfaction; but well selected cows of the old Canadian breed will beat them every time. Jerseys and Ayrshires are being introduced and promise well. The cross of Jersey on the old Canadian cow is very good for rich milk and butter.

James Tolton, Brant, Bruce: Cheese seems to be most generally taken hold of, and the creamery is also popular, for although there is only one creamery in the township there are two on the border. Shorthorn grades are commonly in use, not so much because they are considered best for the dairy, but they are best for general purposes, being fair both for milk and beef.

James Johnston, Carrick, Bruce: We have two cheese and two butter factories here, and all have been well patronized. As far as I can learn cheese has been most in favor, but good prices have been realized all around. Durhams are in greatest favor. Indeed, there is not a bull of any other pure breed that I know of in the township.

Peter Clark, Culross, Bruce: The manager of the Teeswater creamery says that this is the best season he has ever had, having made 84,000 lbs. of butter, part of which he sends to British Columbia and part to London, England. This make brings the highest price in the English market. Durham grades are the best cows we have in this section.

Alex. Garvie, Derby, Grey: There are two creameries and one cheese factory convenient to the township, and the creameries seem to be the most favored. Our cows are the common Canadian and Durham grades. Some Ayrshires and Jerseys are being introduced.

John Booth, Normanby, Grey: Owing to low prices for grain dairying is becoming more popular every year. The creamery or butter factory is most patronized, as it leaves the milk on the farm for calves and hogs. Shorthorn grades are preferred by our farmers.

George Buskin, Artemesia, Grey: Less butter has been made than usual, and very little has been packed in firkins this month. The cows have failed in milk and the milk will not return. Nearly all the cheese factories closed from two to three weeks earlier than usual for want of milk. The most popular breed seems to be the common Canadian cow to a Shorthorn bull.

Wm. Sutherland, Gwillimbury W., Simcoe: There are no cheese factories in this township although there are two bordering on it, and therefore the largest product of milk here is butter. Dry weather and the short pasture have made butter scarcer than in other years. Durhams and grades of that breed are about all that are raised in this township.

John Lennox, Innisfil, Simcoe: Butter is scarce. Pastures were badly burnt during August and September. Cheese being a big price induced farmers to sell their milk to the cheese factory, hence the scarcity of butter. Shorthorn grades are chiefly used for dairy purposes.

Samuel Frazer, Tay, Simcoe: The dairy industry is in a very primitive state. Butter is made for local consumption only. Little of it would bear inspection, but the stores take it all and manage to sell it again —good, bad and indifferent. Cheese is not made here. Our milch cows are a nondescript class, but some farmers are going in for Durhams, which are most in favor.

John Grimason, Caradoc, Middlesex: I believe making butter and feeding milk to pigs and calves is the best industry. Unfortunately the factories are sometimes a couple of months in arrears paying patrons, who are put to some inconvenience for the want of a little ready cash. Durhams are the best breeds.

C. A. O'Malley, Mosa, Middlesex: The condition of the dairy industry has been very fair, owing to the high prices prevailing all the season. Cheese is the most favored industry; the several factories are well patronised and make a splendid quality of cheese for export. There are no creameries except the old domestic! Grade Durhams are preferred. Ayrshires, Galloways and polled Angus are not satisfactory.

James A. Glen, Westminster, Middlesex: The dairy has been very successful as regards prices, but the make will be short. Cheese receives more attention than butter. The milk testing business must be wisely handled or it will be a bad rock ahead for co-operative dairying. Ayrshire grades or common Canadian cows give the largest returns in quantity, but I do not think that large milkers give the best milk.

Robert Leake, Oxford E., Oxford: Most of the milk is sent to the cheese factories. There has been hardly enough butter made for local consumption, consequently it has been high all summer, and is now worth 23 cents. Nearly all our cows are native or Shorthorn grades, and seem to give satisfaction.

James Anderson, Zorra E., Oxford: No butter is made here except for home use—all cheese. There are seven cheese factories in this township. It is hard to say what breeds give the best results. The usual practice is to raise the heifer calves from the best milch cows. Most of the cows in the township are Durham grades. A few are going into Holsteins.

Thos. Mitchell, Dumfries S., Brant: Butter takes the lead, but it is a small product on account of the severe drouth. The Shorthorns and their grades still hold the fort.

Thomas Page, Wallace, Perth: The cheese industry opened out in the spring very timidly, but as the season advanced prices rose from the drouth. The cheese industry is largely patronised here, almost every farmer going into it. So little butter is made as not to satisfy the wants of Listowel, the nearest town. A grade cow is generally preferred for the cheese industry by farmers. It is not so much the breed of the cow as the quantity and quality of the feed the cow get that fills the milk pail.

John Campbell, Blanshard, Perth: The dairy industry has been a success this season so far as prices are concerned, but the quantity of milk was short owing to the dry pastures. There are both cheese and butter factories here, both well patronized. Shorthorns and their grades are the favorites here.

W. B. Freeborn, Mornington, Perth: As the cheese factories are still running, the farmers have not begun to make their supply of butter for winter. Cheese was a good price this season, and although the supply of milk was not as great as last year still the farmers will realize more money, owing to the advanced price of the cheese. Shorthorns and Ayrshires are the favorite breeds.

H. McDiarmid, Puslinch, Wellington: Both butter and cheese are scarce, but the butter production will exceed that of cheese, of which very little has been made for sale. Durham grades appear to be in greatest favor, and give the best result.

W. H. Stubbs, Peel, Wellington: The dairy industry has been good, the principal produce being cheese, which is manufactured very extensively during the summer months. The cows kept in this township are principally grades of the Durham and the Canadian cow, there being only a few of special milking breeds.

John Snyder, Wilmot, Waterloo: This was a good dairy year. The cheese factory takes the lead over creameries as a paying business. Our cows are mostly shorthorns grades, but to find out the best results of different breeds we need some scientific experiments.

George Risk, Wilmot, Waterloo: Nearly everyone sends milk to a factory. There is only one butter actory in this quarter, and I think that any one of the cheese factories will do a third more business than it. Shorthorn grades are in greatest favor.

James Reith, Luther E., Dufferin: The dairy industry has all gone to butter, as our cheese factory did not run this season, and by the use of creamers this section has got a good name in the market. Durham grades are in greatest favor.

Edward Irvine, Grimsby S., Lincoln: Owing to the poor pastures cows are nearly dry, consequently butter is very scarce and dear. Cheese is more controlled by the foreign market than butter is. Grade Durhams are chiefly raised in this township.

Melvin Moyer, Clinton, Lincoln: Farmers are paying more and more attention to dairying. Two large factories in this township are well patronzied by farmers. Shorthorns were previously favorites, but Holsteins and Jerseys are rapidly gaining in favor.

Robt. Inksetter, Beverley, Wentworth: The yield of the dairy, like all other farm products, has not been very profitable this season, as the drouth affected it very materially. Butter paid better than cheese this summer. Shorthorn grades are principally used, but Holsteins are beginning to attract attention.

John Weylie, sr., Glanford, Wentworth: The low price of grains is causing people to turn their attention more to dairying. There is more butter than cheese made here. The breed most in favor is the Durham grade, as there is the great advantage in raising steers for fat cattle.

W. C. Ingelhart, Trafalgar, Halton: A great deal of the milk produced in this township is sent to Toronto for consumption, and consequently butter is scarce and dear, ranging in price from 25c. to 30c. per lb. But very little cheese is made. Grade Durhams are chiefly raised.

Wm. McDonald, Esquesing, Halton: The Eden Mills Creamery Co. gathered cream in this section in the early part of the season, but stopped about the 1st of August as they could not get enough to make it pay on account of the dry weather. There is no cheese factory here. Shorthorn grades are generally preferred.

W. T. Pattullo, Caledon, Peel: There is considerable interest taken in supplying the market with a better quality of butter than formerly, and farmers generally are feeding better with a view of producing more butter and of a better quality. There is but little cheese made, and that chiefly for home use. There were two cheese factories in this township but they have been closed for two or three years. Durhams were the favorites while beef was the object, but of late the price of beeves being low there has been more attention paid to good milking cows—native with one or two crosses. There are a few Jerseys with an increasing demand for them. I believe that the best results are from the native cattle with a cross of the Durham, but if the butter interest developes a little more a cross with the Jersey would, I am satisfied, be better in result.

John Campbell, Chinguacousy, Peel: Butter chiefly is made in this section. There is only one cheese factory in the section. The breed in general use is the Durham, but some few have gone into Jerseys with a great blow about their butter-making qualities. One man claims that he has sold $1,200 worth of butter in ten months from eighteen Jersey cows.

A. Foster, Markham, York: Butter is scarce. Prices were medium until lately, but now they are much higher. Cheese has commanded a good price all the season. A good many send their milk and cream to Toronto. We prefer grade Durhams for milk or cheese, and Jerseys or their grades for cream and butter.

James H. Birchard, Scott, Ontario: The dairy interest is improving every year as farmers are finding there is more money in it than in grain. Butter has commanded a much better price than usual. Cheese factories closed earlier than ordinarily from a lack of milk. We have but one cheese factory in this section, and there are very few in the county. Shorthorn grades are all that are in the county now, but we will have to change our breeds.

Wm. James Grandy, Manvers, Durham: Very little cheese is made in comparison with butter. There is a butter factory in the eastern part of the township. The milk cows here are chiefly Durhams.

Edward F. Sutton, Cavan, Durham: Cheese factories have been tried here again and again, but they have all signally failed. I do not know of one cheese factory in the township. Butter is made in private dairies. The favorite breeds here appear to be Shorthorn grades and natives.

Platt Hinman, Haldimand, Northumberland: There are several cheese factories in the township but not one butter factory, although private dairies furnish some butter for export. Grade Durhams are most in use for cheese factories and for supplying milk by the quart, but grade Jerseys are greatly sought for and bring high prices for family use and private dairies.

C. A. Mallory, Percy, Northumberland: Our farmers this year will make their only profit from cheese. Nearly all in the township are within reach of factories. Very little butter is made except for home use. The high price of cheese, notwithstanding the dry pasturage, will make it an average year to the farmers in dairying. The Holsteins are just now in favor with us, but do not surpass the milking strains of Durhams when crossed with native cows.

W. R. Leavens, Hallowell, Prince Edward: It has been a year of good results in dairying. The creamery had a fair season but is now closed. Cheese and butter will about equal one another this year. Grade cows prevail, but a few herds of Durhams, Jerseys and Holsteins are here. The Jerseys lead in butter making.

Ira B. Hudgins, Richmond, Lennox and Addington: The cheese industry is far ahead of butter. Everybody in reach of cheese factories patronizes them. There are no butter factories in the county, only some private dairies. The cows preferred for the dairy are Shorthorns crossed with native cattle.

Joshua Knight, Storrington, Frontenac: The dairy industry is just booming. There are ten cheese factories in this township but no butter factories. The cows are principally Ayrshire grades, which are thought the best.

J. L. Laycock, Kingston, Frontenac: Butter making is carried on to a limited extent by the old system, as we have no creameries. Cheese is the principal product of the dairy. We prefer Holstein and Ayrshire grades for cheese, Jersey grades for butter and Durham grades for beef.

James Moulton, Leeds and Lansdowne Rear, Leeds and Grenville: There is not much butter raised for the market—nearly all cheese. A large number of Holsteins are being raised here but none are yet milking. Durhams crossed with Ayrshires are my choice, and are as yet I believe in greatest favor.

R. G. Murphy, Crosby S., Leeds: Cheese is our principal product; the only butter made is after the 1st November. Our township is noted for the large amount of cheese manufactured. The breeds of cows are principally Ayrshire grades and the native cattle. Ayrshire and Ayrshire grades give the best results.

Gideon Fairbairn, Edwardsburg, Leeds and Grenville: Farmers have realized good prices for dairy produce. Very few farmers are making butter. There is only one creamery in the township while there are eleven cheese factories. Cheese has paid much better than butter this year, and most of it has been contracted for at 12½ and 12¾ cents per lb. for the last two months. Ayrshire crossed with Holsteins give the best results.

A. Harkness, Matilda, Dundas: In this township there are ten cheese and but one butter factory, though there is still a good deal of butter made in private dairies. Probably two-thirds of the milk product is made into cheese. Ayrshire and Holsteins are in most favor with dairymen. Grade Durhams are numerous. Ayrshires have so far given the best results, but the Holsteins have only been recently introduced. The Durham is not as a rule equal to the old native cow for dairying.

H. F. McDermid, Cornwall, Stormont: Very few farmers make butter, as the cheese factories take most of the milk. There are not many cattle except the common Canadian cows. A few have pure Holstein bulls and some have Ayrshires, and they appear to be in high favor with the owners. There are also a few Durhams.

Robert Wilson, Lancaster, Glengarry: Butter in the meantime is in good demand as the gain in butter over cheese is about three cents a day per cow. Shorthorn grades seem to be the favorites in this section, but I think the Ayrshire grades give the best results in the dairying section.

James Cattanach, Lancaster, Glengarry: As cheese factories are so convenient to all parts of this township the milk is sent to them, as cheese pays best. We have no creamery, and therefore all our butter is home-made.

James Wylie, Hawkesbury E., Prescott: There is very little butter made as there are thirteen cheese factories working in this township. Good butter has commanded 22 cents this fall.

Paul Labrosse, Hawkesbury E., Prescott: Cheese is the principal dairy industry in this township, but butter pays nearly as well as cheese, because there is a good demand at from 20 to 24 cents per lb. Almost all our cows are the Canadian. We have some Ayrshires and a few Durhams.

Peter Bolton, Russell, Russell: Butter is not very plentiful here, and cheese has become almost the whole business this year. The old Canadian grade cow is the best animal for this cold climate. If you get the right kind and care for them as the fancy breeds are cared for you will have the best results.

Wm. Doyle, Osgoode, Carleton: Since the middle of August there has been a great falling off in the supply of milk. The two cheese factories at Manotick had to close the first week of October, the supply of milk was so small. Butter at 20 cents per lb. pays better than cheese if a man has help without hiring. There are some of all breeds of cattle. The result depends more upon the feed and care than on the breed.

Lewis Morton, Goulbourne, Carleton: Butter is more largely produced than cheese, as there are only two cheese factories in this township. The farmers here are not very particular as to breeds of cattle—not so much so as they should be. Since the cheese factories have been in operation the Holsteins seems to be more in favor and are being introduced.

F. Kosmack, Admaston, Renfrew: There is only one cheese factory in this riding. Butter is scarce and a great quantity of it was bad on account of the excessive heat. Shorthorn grades predominate, but Holsteins are gaining in favor.

A. F. Stewart. Beckwith, Lanark: The majority of the farmers patronize cheese industries. Cheese sold so well this year that the probability is that more will send their milk to the factories next year. Cheese sold at 12½ cents for the past three months. Durham grades prevail here.

Lawrence Dowdall, Drummond, Lanark: The state of dairying this year has been good both for butter and cheese, better than it has been for some years past. As for the breed of cows, I think that the Ayrshire cow is a very good one for milk, butter and cheese.

William Maxwell, Laxton, Victoria: Butter was scarce in consequence of the dry weather. Durhams and Jerseys are in highest favor, but some prefer the common grade cows as they require less care than the others.

John Moloney, Douro, Peterborough: The dairy industry is about equally divided between butter and cheese, but the quantity of butter and cheese manufactured is about 25 per cent. below the average, owing to bad pasturage. Durham grades are mostly in favor for their good quality of milk and also for their beefing qualities when past usefulness for milk.

A. R. Kidd, Dummer, Peterborough: Everyone engaged in dairying is delighted with the season's return, and are unanimous in a hope that it may continue, getting neither better nor worse. This township may be said to be in the cheese business completely. Our cows are chiefly of the Shorthorn and Ayrshire grades, and we have some natives. The recent test under the auspices of the Peterboro' Central Fair, held in the town of Peterboro', gave the prize to Shorthorn grades as against thoroughbred Holsteins.

Charles R. Stewart, Dysart, Haliburton: The production of milk this season was not more than one half of the usual quantity, owing to drouth. There is no cheese made here, but lots of butter. The common grade cow is used here, and in my opinion is the most suitable and most profitable, being easier fed.

Anson Latta, Thurlow, Hastings: Cheese is the principal production, as there are no creameries. It is hard to say what breed is the favorite. Holsteins, Jerseys and Shorthorns are admired by many. A Shorthorn carried off the prize at the Quinte fair, recently held in the city of Belleville, for the best milker.

A. H. Smith, Monck, Muskoka: Good butter is scarce and sells readily at 20 cents per lb. There is no cheese factory nearer than Huntsville. Durhams are preferred, as they are good both for milk and beef.

Peter McDonald, Machar, Parry Sound: Butter is the only dairy industry here yet, and that is scarcely enough for home consumption. The Canadian cow if well fed, will do better in this district than any other breed, as our cows have to forage for a living in the summer.

W. T. Hubbert, Campbell, Algoma: Dairying is not so good now on account of the drouth, but as a general thing it is above the average. The country is new, and the milch cows are common stock.

THE APIARY.

At the last annual meeting of the Ontario Beekeepers Association a committee was appointed to prepare a list of enquiries relating to apiculture, to be sent to beekeepers throughout the province by the Bureau of Industries in order to procure statistics of the honey and wax product of Ontario. In a circular issued by the Bureau on February 8th, 1888, the above fact was stated, and accompanying the circular was the committee's schedule, which consisted of the following points of enquiry:

1. No. of Colonies put into winter quarters in Fall of 1886.
2. No. of Colonies with which season of 1887 commenced.
3. No. of increase of Colonies in 1887.
4. No. of Colonies put into Winter quarters in Fall of 1887.
5. Pounds of comb Honey taken in 1887.
6. Pounds of extracted Honey taken in 1887.
7. Pounds of Wax taken in 1887.
8. Value of Honey and Wax produce of season of 1887.

Three thousand schedules were sent out to names furnished chiefly by the Association, and of the replies 651 were sufficiently complete to admit of their being used for tabulation purposes. A number of answers were also received from persons who had either given up beekeeping or had left the province. Table XIV. shows the number of colonies and the product and value of the honey and wax by counties, and a summary by county groups is given below:

Districts.		No. of Returns.	No. of Colonies— Put into winter quarters in the fall of 1886.	With which season of 1887 opened.	Increase in 1887.	Put into winter quarters in the fall of 1887.	Produce of Season. Comb Honey.	Extracted Honey.	Wax.	Value of Honey and Wax Produce.
							lb.	lb.	lb.	$ c.
Lake Erie	agg.	91	2,463	1,886	1,471	3,094	17,961	45,660	879	7,498 02
	av.	....	27.1	20.7	16.2	34.0	197	502	9.7	82 40
Lake Huron	agg.	95	2,023	1,613	1,479	2,850	9,208	71,205	664	7,903 27
	av.	....	21.3	17.0	15.6	30.0	97	750	7.0	83 19
Georgian Bay	agg.	58	1,454	1,055	1,017	1,958	7,163	49,262	659	6,062 36
	av.	....	25.1	18.2	17.5	33.8	124	849	11.4	104 52
West Midland	agg.	157	4,882	3,874	2,437	5,921	20,458	125,999	1,280	15,709 03
	av.	....	31.1	24.7	15.5	37.7	130	803	8.2	100 06
Lake Ontario	agg.	133	4,442	3,435	2,264	5,396	37,217	121,741	1,533	17,968 22
	av.	....	33.4	25.8	17.0	40.6	280	915	11.5	135 10
St. Lawrence and Ottawa	agg.	76	2,565	1,916	1,590	3,275	16,085	51,057	1,160	7,961 61
	av.	....	33.8	25.2	20.9	43.1	212	672	15.3	104 76
East Midland	agg.	28	987	644	457	1,046	3,682	27,249	429	2,958 06
	av.	....	35.3	23.0	16.3	37.4	132	973	15.3	105 65
Northern Districts	agg.	13	199	190	148	288	503	6,920	82	1,176 55
	av.	....	15.3	14.6	11.4	22.2	39	532	6.3	90 50
The Province	agg.	651	19,015	14,613	10,863	23,828	112,277	499,093	6,686	67,237 12
	av.	....	29.2	22.4	16.7	36.6	172	767	10.3	103 28

The 651 apiarists reporting put 19,015 hives into winter quarters in 1886, and began the spring of 1887 with but 14,613, or 4,402 hives less. The greater part of that decrease represents the colonies that died in the winter; a number of colonies were also bought or sold to trim up the apiary in the spring. By the fall of 1887, however, the total number of colonies ready for winter quarters had grown to 23,828, a clear increase of 9,215 in the season and 4,813 more than in the previous fall. The increase from new colonies in 1887 would have made the total for wintering larger but for the fact that "dwindling" and the drouth had weakened many of the hives to such an extent as to make doubling up a necessity in many cases. The average number of hives per apiary placed in winter quarters in 1886 was 29.2, while in 1887 it had increased to 36.6.

The total yield of honey reported for 1887 was 611,370 lb., of which 112,277 lb., or about 18.3 per cent. was disposed of in the comb. The average per apiary was 939 lb., or nearly 26 lb. per hive, which is considered to be not more than half of the usual yield. The product of wax aggregated 6,686 lb., or an average of 10.3 per beekeeper. Wax is too valuable for foundation comb to be readily parted with by the apiarist, and the various ingenious methods for straining honey enable the beekeeper to hold back the wax unless honey in the comb is specially desired. The average value of the honey and wax for each apiary was $103.28, the amount over the $100 representing the value of the wax.

The largest number of returns came from the West Midland group, and the next largest from the Lake Ontario counties. In the St. Lawrence and Ottawa counties the

average number of hives per apiary is higher than that of any other group, being 43.1, and the Lake Ontario counties follow with an average of 40.6 colonies. The value of the product of honey and wax in the Lake Ontario group was $17,968.22, or fully double that of any of the groups except the West Midland, where it reached $15,709.03. In the Lake Erie group the provincial average value of $103.28 per hive fell to $82.40, while in the Lake Ontario counties it was $135.10.

The season of 1887 was one that apiarists will be likely to remember on account of the extraordinary effect of the drouth upon the yield of honey. The bees came through the winter in good condition generally, anything like severe winter-killing being reported from but two or three counties. The season opened early and swarming was unusually vigorous—"early and often" was the favorite description of correspondents. A few cases of foul brood were reported, but on the whole the condition of the bees was healthy. The hives were quickly stored with honey, but the drouth cut the season short. The white clover and linden blooms were soon over, and the bees were early without a foraging ground for nectar. As the season of buckwheat blossom was also shortened by the drouth the bees ceased making honey and began to draw upon their stores in the latter part of July. This enforced idleness from lack of opportunity to get sweets for honey kept alive many old bees that otherwise would have died from hard work or exposure, though there will probably be a heavy falling off in the spring. But to meet this, the queen, who ceased laying early, will after her long rest be likely to start laying earlier than usual in the spring, and will soon make up for any loss among the old bees. Experienced beekeepers place the average net yield per colony, spring count, at 25 lb.

FROM THE AUGUST REPORT.

A. W. Cohoe, Rochester, Essex: The increase of bees was good, and they gathered some honey from white clover and basswood, but none since, and many colonies are now in a starving condition and will be lost unless fed at once.

John Bishop, Orford, Kent: Bees did well in the spring; they swarmed early and often, but the dry weather has about starved them to death, and set them to robbing.

M. Payne, Southwold and Yarmouth, Elgin: This is a very poor honey year. The bees swarmed all right, but the dry, hot weather seems to have cut off the supply. Bees are generally in good health.

A. N. Simmons, Middleton, Norfolk: They have increased well during the swarming season, but the yield of honey will not be more than one-third of last season.

William Kindree, Cayuga N., Haldimand: Bees are strong at present, although there have not been many swarms. It has been too dry, and honey will not be half a crop. White clover did not give much honey. Alsike did well and so did basswood, but only for a short time.

F. A. Hutt, Stamford, Welland: The surplus up to the present time is about 25 lb. a colony. Our apiary consists of 30 colonies, increased by swarming to 55. We do not notice anything that would indicate the presence of disease. The bees are seemingly healthy, but I have noticed what I consider an unusual quantity of dead brood. In reference to the production: The season opened very favorably, the colonies increasing very fast in bees, and during the fruit blossoms working most industriously, making a nice surplus; but the drouth that followed shortened our principal honey supply, viz., white clover and basswood. The showers of last night and to-day (Aug. 11) will help the buckwheat bloom, and although we do not expect a surplus from this, it will stimulate breeding and prepare the bees be tter for winter quarters.

G. A. Deadman, Morris and Grey, Huron: I give below a statement for the townships of Morris and Grey: Morris—There are about 500 colonies, spring count; increase by swarming, 300. The yield of surplus honey will be about 25 lb. per colony, spring count, and is not up to the average. White clover failed to yield much nectar, probably due to cold nights. Basswood bloomed well, and yielded nicely for a few days, but the bloom was soon over, owing to the hot weather. We are getting no honey from fall flowers, and the bees have been drawing upon their supplies since August 1st. The Jones hive is principally used in this township. Grey.—Probably 200 colonies, spring count; increased 100 per cent. Yield of honey about 20 lb. of surplus per colony, spring count. A large proportion of bee-keepers in this township use box-hives; the remainder, Jones and Thomas hives. There is no disease of bees in either township that I am aware of. There are not good prospects of wintering well, as breeding has ceased early. The above reports include the village of Brussels, which has 250 colonies on the Morris side and about 50 on the Grey side.

Peter Reid, Kinloss, Bruce: A good many bees were lost in the spring by foul brood. They swarmed early and often. The product of honey has been good, and the prospect has been altogether favorable.

R. Gillies, Sullivan, Grey: Bees are in good health. They swarmed well and made honey early, but did not make much after the dry weather commenced. Bees were killing drones in July.

Wm. Jamieson, Westminster, Middlesex: A great many died in winter, and they have done very poorly in the way of swarming, and the yield of honey will be very poor as there was scarcely any white clover. I also fear buckwheat will be a failure, and hence but little honey.

M. & W. Schell, Oxford E., Oxford: Bees were in splendid condition when the honey flow usually comes, but white clover did not yield the usual amount of nectar. The product will be light; not more than 30 lb. from colonies that did not swarm. The bees did not swarm as much as usual.

James Stull, Grantham, Lincoln: This has been a very bad year for bees. There was a great com motion among them during the swarming season; there is not much honey.

Thos. Shaw, Binbrook, Wentworth: Bees are generally in good health. There have been splendid swarms, but poor honey product.

John Campbell, Chinguacousy, Peel: Bees did exceedingly well in the fore part of the season. They swarmed well and made a lot of honey, but since the 15th of July they have done nothing but live.

D. B. Nighswander, Markham, York: Bees swarmed very often, but their health is good. The honey product is very good and of good quality. There is every prospect of good wintering.

L. Weller, Scott, Ontario: The health of bees is good. My increase was from 50 to 75 (that is 25 new colonies), and my neighbor from 39 old has over 100 in all. I put on surplus arrangements early and fed the swarming bees. My greatest yield from one colony was 110 sections; the least, nothing. The season is too dry, and honey will be a light crop.

S. Hinman, Cramahe, Northumberland: Bees were affected a good deal by the drouth, which seemed to dry the flowers prematurely. There was about half as much swarming as usual, and the yield of honey will be small in consequence.

George N. Rose, Marysburg N., Prince Edward: Bees appear to be healthy and have done considerable swarming, but are not making much honey.

P. W. Miller, Kaladar, Lennox and Addington: Bees have done very well in swarming and are generally in good condition, but the honey flow was light. The dry weather has been the cause.

John Simpson, Kingston, Frontenac: My bees have done well this season both in swarming and cup honey. I commenced with seven hives and have eighteen strong stocks. I join the weaker swarms.

John Ferguson, Wolford, Leeds and Grenville: It has been an average season for bees. Many swarms died last winter, and those that lived were weak. The supply of honey is entirely in excess of the demand, so that many are careless about raising bees.

[illegible]P. Gareau, Plantagenet N., Prescott: Bees have wintered well and are healthy; they swarmed fairly well. The honey product was good during the first part of the summer, but has failed considerably, and a profitable fall is not expected.

Peter Bolton, Russell, Russell: The bees were never known to do better. We have as high as four swarms from a hive. All the hives are filled, and the bush seems to be filled with swarms this year.

H. A. Schultz, Sebastopol, Renfrew: Bees came out of their winter quarters in the best of condition. The genial spring weather enabled them to build up rapidly, and to commence swarming from ten to twelve days earlier than usual. The honey product for the month of June was excellent, both as to quantity and quality. Linden was a failure for honey.

Wm. Paterson, Ramsay, Lanark: Bees died largely last winter, and the drouth and heat are telling on the product. They swarmed well, however.

Thos. Beall, Ops, Victoria: Most of the bees here were winter-killed, but those that came through all right did well in the early honey season. The season was unusually short, occasioned by the dry weather. One apiary will have from six to eight tons of honey surplus, which I think is more than all others put together in this section.

A. R. Kidd, Dummer, Peterboro': Bees appear to have done remarkably well. There was an unusually large basswood blossom, which is the "pure gold" for bees.

Wm. J. Casselman, Brunel, Muskoka: Bees have not done well. I put out 34 colonies last spring and have now 61. I got about 950 lb. of honey, and expect to feed back about 600 lb. for winter.

FROM THE NOVEMBER REPORT.

Edward Nash, Mersea, Essex: Bees have made but very little honey this season. A good many will have to be fed to get them through the winter.

F. B. Stewart, Raleigh, Kent: Bees have been healthy, but on account of the drouth honey is very scarce. Some expect to need all their crop for wintering over.

Samuel Maccoll, Dunwich, Elgin: Bees will have scarcely enough honey to winter on, the product is so short.

O. E. Twiss, Middleton, Norfolk: Bees are thriving as well as could be expected. The honey product was small this year, on account of the drouth, and several have been feeding.

V. Honsberger, Cayuga S., Haldimand: The honey supply is below an average this year on account of the dry weather. Bees appear to be in a fair condition this fall, but they require a good deal of feeding to make them so.

John A. Law, Stamford, Welland: Bees did not do well in many parts of our township, as there was no second clover crop.

G. A. Deadman, Morris, Huron: Colonies are stronger in bees than I supposed they would at this date Oct. 20), as the queen ceased laying early owing to the absence of nectar from fall flowers. The bees have therefore been drawing upon their supplies since the beginning of August. The large number of bees is no doubt due to this cessation of activity on their part, there being no incentive to work, so that many that would have otherwise died from hard work and exposure still live. It may reasonably be supposed that there will be a great falling away in the spring, but this will likely be counter-balanced by the queen after so long a rest starting to lay her eggs earlier, thereby supplying the colonies with young bees to take the place of the dead and the dying. This year it will be prudent to winter bees in the cellar or other protected repositories, as the old bees will hardly have the vitality to withstand the cold and exposure of an average winter. Apiarists would do well to make sure of the amount of honey their colonies have in the hive, as the bees have already consumed an unusual amount of that in store. The yield per colony, spring count, is much below the average, about 25 lb.

Hugh Murray, Bruce, Bruce: The honey crop was quite a disappointment. Great hopes were formed from the favorable spring which were not realized when the honey season arrived. Clover, although plentiful, did not appear to yield honey in any quantity, and basswood was of no account.

Robert Gillies, Sullivan, Grey: It has been the poorest season for honey I have experienced in 27 years. If not fed and well cared for there will be very few next spring.

Wm. Jamieson, Westminster, Middlesex: Bees have had a poor season. The produce of honey will be small, and the increase by swarming will give a poor showing.

F. Malcolm, Blandford, Oxford: Bees are on the increase, but have not done well this year. Many beekeepers got little or no honey. The best I have heard of is 50 lbs. per colony, and that by one man only. Had 80 colonies.

W. B. Freeborn, Mornington, Perth: I fear many of the colonies are short of supplies, as the honey season was cut short by drouth, and many of them will not winter.

Christian T. Groh, Waterloo, Waterloo: It has been a poor year for bees, as it was too dry. They have hardly doubled in stock, and while some have yielded as high as 45 or 50 lb. the average has been about 25 lbs. of honey to a hive.

Wm. M. Kiernan, Mulmur, Dufferin: Bees did well while the honey season lasted, but it was very short, there being only about eleven days of honey harvest. The bees have been consuming winter supplies since June 23rd, and must be fed largely for winter or heavy loss will result.

Frank Wyatt, Grantham, Lincoln: It has been a very poor season for gathering honey, and many bees will starve this winter.

Adam Alexander, Nassagaweya, Halton: Last winter was a hard one on bees, and most of the bee-keepers tried more to increase their stock of bees than to make honey. There is little, if any, local honey for sale.

John Campbell, Chinguacousy, Peel: Honey is not a large crop on account of the short season. There was a good flow the fore part of the season, but it dropped very soon on account of dry weather. There is about 40 lb. per hive, with hives light without feeding up. Bees have been healthy this season, and there have been a good number of swarms.

J. D. Evans, Etobicoke, York: Bees are in a fair condition for the winter, but the honey crop is short, as the white clover blossom failed early.

W. A. Peters, Hope, Durham: Bees will have to be fed through the winter or they will starve. The honey product is very light.

S. Hinman, Cramahe, Northumberland: Bees have had a poor year. The drouth and heat dried up the flowers prematurely and cut the bees short.

W. N. Dollar, Fredericksburg N., Lennox and Addington: Bees did not swarm as well or make the same amount of honey as in 1886.

Thos. Tapping, Barrie, Frontenac: Bees did well till about the first or second week of July, but since that time they have not done anything. I have three or four early swarms that are very heavy, while those that were a week or ten days later have not honey enough to keep them alive through the winter.

Donald P. McRae, Roxborough, Stormont: Bees did very well in the first part of the season, but late colonies are too weak to stand the winter.

Robert Thistlethwaite, Hawkesbury W., Prescott: There is only one large apiary in the township, consisting of 150 or 200 hives. Several farmers also raise a few swarms for their own use. The production has been fair and the quality is excellent.

Peter Bolton, Russell, Russell: Bees did well in the first part of the season, but they have had to live on what they gathered for the past two months, and that has wasted their store.

Wm. Hawkins, jr., Stafford, Renfrew: Bees did well early in the year, but I am afraid a good many of the swarms will not see spring.

Wm. Cookman, Somerville, Victoria: The bees seem very healthy, but they made no honey in the latter part of the season. If they are not fed I believe there will be a great loss of bees this winter.

John Moloney, Douro, Peterborough: The honey product will be short this year as there was no blossom worth anything except basswood. Bees will go with small supplies into winter quarters.

FROM THE FEBRUARY RETURNS (Feb. 8, 1888).

Arthur B. Castell, Howard, Kent: White clover was a total failure in 1887 in this locality, but basswood honey was plentiful and of choice quality.

Wm. Morris, Aldborough, Elgin: I put my bees out early in the spring of 1887, and they dwindled down, and I had to buy bees by the pound. After taking the bees out of the cellar I did not keep them sufficiently warm. One beeman tells me he lost 20 skips the same way.

John E. Cohoe, Wainfleet, Welland: Honey was almost a complete failure here owing to the drouth. The bees swarmed well until the drouth set in. A great many of my young swarms flew out in the fall, having consumed all of their stores, and perished on trees and on the sides of other hives, the other colonies not allowing them to enter.

John V. Battram, Moore, Lambton: I used all my wax, and bought about 120 lbs. of foundation. I sold about half the honey at 12c. The bees are in good condition at present. Last season proved a poor honey harvest, but the quality was good.

J. Langstroth, Tuckersmith, Huron: The season of 1887 was too dry for the honey to secrete in large quantities.

J. B. Ritchie, Brant, Bruce: The honey yield was poor in this locality last year. Fears are entertained of great losses of bees this spring, on account of very little late breeding. Most of the beekeepers around here had to feed artificially.

Wm. Rowand, Brant, Bruce: I am trying the cellar for the first time. Up to date one colony (a small one) is gone, but the rest are doing well. The temperature has ranged from 38° to 41° for about two months, but previous to that it ranged from 42° to 46° from the middle of October. I put half of the colonies in at that time. The other half I left to the last week of December, and they are all alive yet, with no appearance of dysentery. The cellar is dry, as the smoke flue of the furnace passes through it.

Thos. Boland, Artemesia, Grey: My bees made no more than will winter them. Last season was the worst here for many years; the drouth checked the honey flow.

Charles A. Smith, London, Middlesex: My cellar being too damp and cold, the bees got diarrhœa, and all died but one; and it was so weak it dwindled away in the spring. It was the worst winter I ever had since I started beekeeping.

C. R. Patience, Oxford W., Oxford: I had to feed back about 25 per cent. of honey in the fall. The season was too dry for honey, or an increase in this section. Some apiaries are not even getting enough to winter.

J. B. Hall, Blandford, Oxford: I fed back to my bees sugar syrup costing $16.80, while the value of honey and wax was but $12. The increase, therefore, was $4.80 less than nothing!

W. J. Robinson, Mono, Dufferin: It was a poor season on account of drouth. My bees are all living at this date (Feb. 20.) They are in the cellar.

C. W. Hellems, St. Catharines, Lincoln: The year 1887 had the shortest honey season of any year I have ever known in forty years, on account of drouth.

W. B. Terry, Gwillimbury N., York: My bees wintered badly in 1886-7, and also in what some beekeepers call "springing" or dwindling away after setting out in the spring; consequently it was a disastrous season with me, and I think with most of the beekeepers in Ontario. I believe the returns for 1887 will not show a fair yearly average.

John Nichol, Whitby, Ontario: The season of 1887 was a total failure as far as honey making was concerned. Many old swarms did not make an ounce beyond keeping themselves alive.

Allen Pringle, Richmond, Lennox: Owing to the severe and protracted drouth the winter was an exceptionally poor one for honey production. My bee culture has always been in connection with farming, of which I consider it a legitimate part.

John W. Calder, Lancaster, Glengarry: The past season was a poor one in this locality. The bees did well at first, but the great drouth soon stopped the honey flow. I have kept bees in large numbers for the last fourteen years, and I found 1887 about as bad a year as we have had.

Edmond Anderson, Lanark, Lanark: The season of 1887 has been the poorest in fourteen years, the average yield per colony being only a little over 33 lb. The average yield per colony for the past nine years was 64½ lb., and the largest average yield of any single year of the nine was in 1881, when 115½ lb. per colony were realized.

George Garlick, Dummer, Peterborough: In the fall of 1882 I had 150 stocks, but in the spring of 1883 I had but four left. I bought some and increased to 46 in 1885, but in the spring of 1886 all died out, and I have quit the business. I kept bees successfully for 25 years, selling from 2,700 to 3,000 lb. of honey per annum, and in 1881 3,500 lb.

Lewis Marsh, Huntingdon, Hastings: I find I am in the immediate vicinity of that terror to beekeepers, foul brood. There are two apiaries almost destroyed in the past year by this loathsome disease. I would not have my bees get a drop of the infected honey for $500. I wish the Government would take up the matter and stamp out the disease.

CHEESE FACTORIES AND CREAMERIES IN ONTARIO.

CHEESE FACTORIES IN OPERATION IN ONTARIO DURING 1887, WITH NAME AND POST OFFICE ADDRESS OF THE SECRETARY OF EACH FACTORY.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
ESSEX:			
Mersea	Blytheswood	C. W. Hind.....Prop.	Blytheswood.
KENT:			
Camden	Dawn Mills	William E. Kelly	Dawn Mills.
	Thamesville	Daniel Jolliffe	Thamesville.
Chatham	Chatham Centre	John Johnston.....Sec.	Eberts.
	Chatham Gore	D. McArthur	Tupperville.
	Sydenham Valley	John Tassie.....Sec.	Wallaceburg.
	Wallaceburg	John Skinner.....Sec.	do
Harwich	Blenheim	George M. Baird.....Sec.	Blenheim.
	Creek Road	J. W. Buller	Harwich.
Howard	Botany	N. P. Weeks	Botany.
	Ridgetown	D. G. Willson.....Prop.	Ridgetown.
	Howard	James Buller.....Prop.	Selton.
Orford	Orford Cheese Co	S. McDonald.....Sec.	Muirkirk.
Tilbury, E	Valetta	George Hope.....Sec.	Valetta.
ELGIN:			
Aldborough	Crinan	W. H. McLean	Crinan.
	Rodney	Wm. Morris.....Sec.	Rodney.
	Rosedale*	Edwin Terry	Aldborough.
Bayham	Bayham	E. T. Martin.....Sec.	Griffin's Corners.
	Bayham Branch	James Elliott....Cheesemaker.	Tilsonburg.
	Bayham and Malahide	Isaac Brown.....Dir.	Corinth.
	Nova Scotia Street	James E. Chute.....Sec.	Lakeview.
	Talbot Street	G. W. Marshall.....Sec.	Guysboro'.
	Vienna	Wm. Watt.....Treas.	Vienna.
Dorchester, S	Avon	Richard Jolliffe	Avon.
	Lyons	Thomas Wilkinson.....Sec.	Lyons.
	Springfield	John Clunas.....Sec.	Springfield.
Dunwich	Dutton*	W. S. Jackson.....Sec.	Dutton.
	Wallacetown	Donald Campbell.....Sec.	Wallacetown.
Malahide	Malahide	Robert Abell	Seville.
	Northwood	J. W. Hutchinson.....Sec.	Aylmer.
Southwold	Iona	John McNeil	Iona Station.
	West Magdala	R. R. Cranston	West Magdala.
Yarmouth	Elgin	John W. Scott	Sparta.
	Yarmouth Centre	James Brown.....Sec.	Yarmouth Centre.
	Mapleton	E. Culver	Mapleton.
NORFOLK:			
Charlotteville	St. Williams	G. W. Newman.....Sec.	St. Williams.
	Vittoria	John Pow.....Sec.	Vittoria.
	Walsh	Chas. Turvey	Walsh.
Houghton	Houghton Centre	S. T. Jackson	Houghton.
	Houghton & Walsingham	T. E. Brown	Clear Creek.
	Clear Creek	Jonathan Williams	do
Middleton	Delhi	Jacob Sovereen	Delhi.
	Middleton and Bayham	O. E. Twiss.....Sec.	Courtland.
Townsend	Bloomsburg	J. H. Lingwood.....Sec.	Bloomsburg.
	Boston	Andrew Edy.....Sec.	Boston.
	Rockford * Villa Nova *	William R. Shearer	Villa Nova.
	Waterford	L. N. Collver	Waterford.
Walsingham	Carholme	James Knowles	Carholme.
	Langton	John Brayley	Langton.
	Lynedoch	C. A. Ostrander	Lynedoch.
Windham	Bookton*	H. J. Middaugh	Bookton.
	Ranelagh	G. A. Carter.....Sec.	Ranelagh.
	Vanessa	W. J. Reavely	Vanessa.
Woodhouse	Black Creek	W. C. Parsons	Jarvis.
	Excelsior	W. H. Olds.....Sec.	Simcoe.
	Norfolk	Edmund Ford.....Prop.	Lynn Valley.

* No return received from factory.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
HALDIMAND:			
Canborough	Canborough	Wm. H. M. Birdsall.....Prop.	Canborough.
Cayuga, N	Kohler	Clark McCombs	Kohler.
Cayuga, S	South Cayuga	Francis Splatt	Dunnville.
Dunn	Lake View		
Oneida	Hagersville	J. T. Park.....Sec.	Hagersville.
Seneca	Tyneside	James N. Paget	Tyneside.
Moulton	Attercliffe Station	Wm. Shirton.....Sec.	Attercliffe Station.
	Stromness	Arch. McDonald	Stromness.
Walpole	Cheapside*	R. A. Walter	Cheapside.
	Jarvis, West	W. C. Parsons	Jarvis.
	*	Wm. Parkinson.....Prop.	do
	Walpole	John H. Best	Balmoral.
WELLAND:			
Bertie	Bertie	E. O. Disher	Ridgeway.
	Lee's	E. N. Lee	do
	Willowdale	Solomon N. Beam	Black Creek.
Pelham	North Pelham*	A. E. Moore	Pelham Union.
Wainfleet	Marshville *	Wm. Gifford	Marshville.
	Wellandport*	Hamilton Johnson	Wellandport.
LAMBTON:			
Bosanquet	Ridge Tree	George Sutherland.....Sec.	Thedford.
Brooke	Aberfeldy	John J. Risk.....Prop.	Aberfeldy.
	Brooke	John D. Carroll.....Sec.	Watford.
	Brooke & Warwick Union	Alex. Cowan.....Sec.	Watford.
Euphemia	Annett's	George Annett	Sutherland's Corn's.
	Florence	W. E. Norton	Florence.
	Euphemia	Arch. McKellar	Alvinston.
Moore	Brown's *	J. Jarvis	Colinville.
	Colinville	Clement White	do
	St. Clair	John Leach.....Sec.	Sarnia.
Plympton	Gala Bank	Wm. Symington.....Sec.	Camlachie.
	Uttoxeter	Edward Archer.....Sec.	Warwick W.
	South Plympton	A. Y. Anderson.....Sec.	Wyoming.
Sarnia	Cole's	Wm. Cole.....Sec.	Cole's Corners.
	Vyner	Wm. Carrick.....Sec.	Mandaumin.
Sombra	Sombra Ch. Company	W. S. Howell.....Sec.	Sombra.
Warwick	Forest*	Robert McFarland	Forest.
	Maple Grove	Wm. Thompson.....Sec.	Arkona.
	Thompson's		
	Warwick	Robert Herbert	Warwick.
HURON:			
Ashfield	Kintail*	John Long	Kintail.
Grey	Grey and Morris	Daniel Stewart.....Sec.	Brussels.
	Ethel	Levi Pannabaker.....Sec.	Cranbrook.
	Molesworth	Henry Coghlin.....Sec.	Molesworth.
	Walton	R. H. Ferguson.....Sec.	Walton.
Howick	Fordwich	David Shuh.....Sec.	Kurtzville.
	People's	Wm. McKercher	Wroxeter.
	Springbank	Geo. Padfield.....Sec.	Gorrie.
Hullett	Constance*	J. R. Murray	Constance.
McKillop	Winthrop	John C. Morrison.....Sec.	Winthrop.
Stanley	Blake	Andrew Park	Blake.
Stephen	Crediton	Charles Brown	Crediton.
Tuckersmith	Rodgerville	James Murray	Rodgerville.
Turnberry	Bluevale	John Burgess.....Sec.	Bluevale.
Wawanosh, E	Belgrave	George Hood.....Sec.	Sunshine.
BRUCE:			
Arran	Allenford	D. C. Mackinnon.....Sec.	Allenford.
	Tara	G. G. Mitchell.....Sec.	Tara.
Brant	Brant Ch. and B.	Daniel Sullivan.....Sec.	Malcolm.
	Dunkeld	Louis Kaufman.....Sec.	Dunkeld.
Bruce	Climax	John McKellar.....Sec.	Tiverton.
	Underwood	Amos Hilker.....Sec.	Underwood.
	Gresham	John Johnston.....Sec.	Gresham.
Carrick	Belmore	D. N. McDonald.....Sec.	Belmore.
	Otter Creek	Louis Braun.....Sec.	Walkerton.
Greenock	Pinkerton	David Pinkerton.....Sec.	Pinkerton.
Huron	Huron	James Harrison.....Pres.	Kincardine.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
BRUCE.—*Continued.*			
Huron	Pine River	John Thompson ..... Pres.	Pine River.
Kincardine	Millarton*	G. C. Ross	Kincardine.
	Bervie, Thorntail	H. O. Foster	Tiverton.
Kinloss	Holyrood	George McIntosh ..... Sec.	Holyrood.
	Lucknow	J. A. Denning ..... Sec.	Lucknow.
Saugeen	Burgoyne*	E. D. Baker	Tiverton.
	Star	George S. Webb ..... Sec.	North Bruce.
GREY:			
Artemesia	Flesherton	James Brodie ..... Sec.	Vandeleur.
Normanby	Mt. Forest	Joseph Tuck ..... Treas.	Mt. Forest.
	Wherry	Robert Wherry	Varney.
Osprey	Wareham *	John M. Burk ..... Pres.	Wareham.
Proton	Dundalk	Robert Cornett	Dundalk.
	Edgerton	John Abbott ..... Sec.	do
	Enniskillen	J. J. Duncan ..... Sec.	do
	Victoria	Wm. Hames ..... Sec.	Inistioge.
St. Vincent	St. Vincent	T. A. Pearsall ..... Sec.	Meaford.
SIMCOE:			
Gwillimbury, W	Gilford	James A. Blain	Gilford.
Oro	Crown Hill	John Darby ..... Sec.	Crown Hill.
	Edgar*	E. A. Bond	Edgar.
Nottawasaga	Lavender	Samuel Flach ..... Mgr.	Lavender.
Tecumseth	Cookstown	W. F. Moore ..... Sec.	Cookstown.
MIDDLESEX:			
Adelaide	Adelaide	Russell Smith	Keyser.
	Kerwood	Jas. Beckton	Kerwood.
	Mud Creek	R. J. Coulton	Springbank.
	Victoria	John L. Fuller	Watford.
Biddulph	Cedar Vale	Michael Blake ..... Sec.	Elginfield.
	North Middlesex	George W. Fox ..... Sec.	Lucan.
Caradoc	Caradoc	W. E. Sawyer ..... Sec.	Mt. Brydges.
	Mt. Carmel	D. Leitch	Strathroy.
	Muncey Road	Samuel Price ..... Sec.	Muncey.
Delaware	Delaware	Wm. Field ..... Sec.	Delaware.
Dorchester, N	Burnside	S. Barr ..... Sec.	Mossley.
	Dorchester Sta	Tobias Eckhardt	Dorchester Sta.
	Gladstone	J. B. Lane ..... Treas.	do
	Gore	James Smith	Crampton.
	Harrietsville	Francis Kunz ..... Sec.	Harrietsville.
	Thames	J. A. James ..... Cheesemaker.	Nilestown.
Ekfrid	Appin	James McFie ..... Treas.	Appin.
	Mayfair	James G. Begg	Melbourne.
London	Devizes Union	R. Elliott ..... Cheesemaker.	Plover Mills.
	Geary	John Geary ..... Prop.	London.
	Melrose	David Sells	Ferguson.
	North Branch	A. J. Kernohan ..... Sec.	The Grove.
	Proof Line*	John B. Muir ..... Sec.	Arva.
	Union Hill	R. H. Harding ..... Sec.	Thorndale.
Metcalfe	Napier	John Hutton ..... Sec.	Napier.
	Sifton's	Wm. Sifton	Strathroy.
	Wilson's	Francis Wilson	do
Mosa	Glencoe	Hector McFarlane ..... Sec.	Glencoe.
	Wardsville	W. Atkinson ..... Sec.	Wardsville.
Nissouri, W	Nissouri and Blanshard	Fergus McMaster ..... Sec.	St. Mary's.
	Cherry Hill	Hope Webster	Thamesford.
	Nissouri West	Wm. Lee ..... Sec.	Thorndale.
Westminster	Belmont	George McKellar ..... Sec.	Belmont.
	Belmont Branch*	Henry Shoff	do
	Glanworth	Sidney A. Smith	Glanworth.
	North Street	Wm. Burch ..... Prop.	Lambeth.
	Pond Mills	John McDougall ..... Sec.	Pond Mills.
	White Oak	John H. Burnard ..... Sec.	White Oak.
Williams, W	Rob Roy	Wm. Dickson ..... Sec.	Parkhill.
OXFORD:			
Blandford	Bright	John Riesberry ..... Pres.	Bright.
	Eastwood	W. E. Hopkins ..... Sec.	Eastwood.
	Farmer's Home	Jonathan Graham	Drumbo.
Blenheim	Soho	Wm. McArthur ..... Sec.	Princeton.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
OXFORD.—*Con.*			
Dereham	Brownsville, Culloden	Benjamin Hopkins. ....Sec.	Brownsville.
	Culloden Branch		
	Campbellton		
	Deer Creek*	J. H. W. Benson	Verschoyle.
	Dereham and Norwich	Wm. Jones....Sec.	Mt. Elgin.
	Dereham and Oxford, W.	Wm. Wilson....Sec.	Ingersoll.
	Lawson's	J. P. Harris ....Sec.	Holbrook.
	Mt. Elgin*	J. V. Bodwell	Mt. Elgin.
	Prouse's	Thomas Prouse	do
	Salford	J. P. Harris ....Sec.	Holbrook.
	Verschoyle	James Hunter	Verschoyle.
Nissouri, E	E. Nissouri	W. I. Chisholm ....Sec.	Thamesford.
	East Branch	Thomas W. Alderson	Kintore.
	Kintore	D. R. Calder ....Sec.	do
	Lakeside	Robert Marshall	Lakeside.
	Thamesford	David Lawrence ....Sec.	Thamesford.
Norwich, N	Burgessville*, Pioneer *	J. L. Farrington	Norwich.
	Ontario*	H. S. Losee ....Sec.	do
	Smith's	John Duncan....Sec.	do
Norwich, S	Somerville	Wm. Morris ....Sec.	Otterville.
	Springford*	John R. Johnson	Springford.
Oxford, E	Diamond	James McConnell....Sec.	Vandecar.
	Oxford, E. and W	M. S. Schell ....Sec.	Woodstock.
Oxford, N	Maple Leaf	Thos. Caddey....Prop.	Ingersoll.
	North Oxford	W. H. Sutherland ....Sec.	do
Oxford, W	Harris St.	T. L. Newton....Sec.	Salford.
	Oxford, W	W. G. Francis ....Sec.	Ingersoll.
Zorra, E	Blandford and E. Zorra	Thos. Lockhart....Sec.	Walmer.
	Germain Union	Otto Pressprich....Sec.	New Hamburg.
	Honey Grove	Robert Morton	Cassel.
	Olive Leaf	David Malcolm	Innerkip.
	Spring Creek	H. C. Facey	Woodstock.
	Strathallan	Absalom Glaves ....Sec.	Hickson.
	Zorra E. Central	James Anderson	Strathallan.
Zorra, W	Brooksdale	R. G. Murray....Sec.	Fairview.
	Cold Springs	Hugh Matheson	Youngsville.
	W. Zorra	Samuel Elliott	Ingersoll.
BRANT:			
Brantford	Paris Road	George Hill ....Prop.	Brantford.
Burford	New Durham	James Paterson	New Durham.
	Kelvin	Joseph McCombs....Sec.	Kelvin.
Oakland	Oakland*	Amasa Beebe	Oakland.
PERTH:			
Downie	Avonbank	Wm. Tier ....Sec.	Motherwell.
	Black Creek	Thos. Ballantyne, M.P.P	Stratford.
	Downie	S. J. Kilpatrick....Sec.	Avonton.
	Gore of Downie	John Dempsey....Prop.	Fairview.
	Kastnerville	George Barthell	Stratford.
Easthope, N	Avondale	Thomas Ballantyne, M.P.P	do
Easthope, S	Tavistock	Ballantyne & Gillard	Tavistock.
Elma	Briton	William Stevenson	Briton.
	Donegal	Samuel McAllister	Donegal.
	Elma	William Lochhead ....Sec.	Listowel.
	Elmbank	Robert Cleland	Listowel.
	Gotham	Joseph Freeman ....Sec.	Briton.
	Monkton	A. Erskine....Sec.	Monkton.
	Newry	John Morrison	Newry.
	Rosedale	George Robertson	Monkton.
	Woodside	James Danbrook....Sec.	Listowel.
Fullarton	Cold Creek	F. J. Coleman	Fullarton.
Logan	Willow Grove	William Squire	Bornholm.
Mornington	Carthage	Samuel Watson ....Sec.	Carthage.
	Milverton	Donald McGillivray ....Prop.	Milverton.
	Newton	Hugh Jack....Prop.	Newton.
Wallace	Cedar Grove	George V. Poole	Wallace.
	Wallace	John Stewart ....Sec.	Listowel.
WELLINGTON:			
Arthur	Conn	James McLuhan ....Sec.	Conn.
	Kenilworth	George Cushing....Sec.	Kenilworth.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address
WELLINGTON—*Con.*			
Luther, W	Luther, W., and Arthur	John McNab ..... Sec.	Arthur.
Maryborough	Maryborough	William Wilson ..... Sec.	Rothsay.
	Riverbank	William Rafter ..... Sec.	Riverbank.
	Wyandotte	William Patterson ..... Sec.	Moorefield.
Minto	Harriston	William McLellan ..... Sec.	Harriston.
	Minto and Arthur	J. R. Suddaby ..... Sec.	Harriston.
	Palmerston	Richard Andrew ..... Sec.	Palmerston.
Peel	Goldstone	William T. Whale	Goldstone.
	Peel	James White ..... Pres.	Winfield.
WATERLOO:			
Dumfries, N	Roseville	John Wilson ..... Sec.	Galt.
Wellesley	Bamberg	Ferdinand Walter ..... Sec.	Bamberg.
	Honey Grove	J. W. Chalmers	Poole.
	Linwood	Benjamin Sanderson	Linwood.
Wilmot	Nith Valley (Creamery)	Henry D. Tye ..... Sec.	Haysville.
	Oak Grove, Philipsburg	Otto Pressprich ..... Sec.	New Hamburg.
Woolwich		Eli H. Bauman	St. Jacobs.
DUFFERIN:			
Amaranth	Laurel	Jonathan Varcoe ..... Sec.	Laurel.
Luther, E	Luther, E*	Hugh McDougall ..... Sec.	Tarbert.
Melancthon	Shelburne	Robert Cornett ..... Sec.	Dundalk.
Mono	Orangeville	J. S. Leighton	Orangeville.
LINCOLN:			
Caistor	Caistorville	Adam Spears	Caistorville.
Clinton	Campden	Melvin Moyer	Campden.
Gainsborough	Gainsborough	Michael Ginther ..... Sec.	Bismarck.
	St. Ann's	Charles L. Snyder	St. Ann's.
Grimsby, S	Fernside	Nathan Field	Smithville.
WENTWORTH:			
Ancaster	Renforth	William Mayhew ... Salesman.	Renforth.
Beverley	Maple Grove	David Patterson	Dundas.
	Sheffield	C. W. Laing & Co	Sheffield.
PEEL:			
Chinguacousy	Norval	Robert Groat ..... Sec.	Georgetown.
YORK:			
King	King*	Charles Norman	King.
Markham	Cedar Grove	Mrs. J. N. Raymer	Box Grove.
	Ringwood	A. B. Grove	Ringwood.
ONTARIO:			
Pickering	Pickering *	James V. Richardson	Pickering.
Reach	Reach	William Spence	Manchester.
Uxbridge	Uxbridge	Ira Chapman ..... Prop.	Uxbridge.
	Goodwood	J. F. Todd	Goodwood.
Whitby, E	Geneva	James Burns	Columbus.
DURHAM:—			
Clarke	Newtonville	W. W. Dickey ..... Sec.	Clarke.
	Orono	G. M. Long ..... Sec.	Orono.
Darlington	Darlington	J. H. Allin ..... Sec.	Courtice.
	Hampton	F. L. Ellis ..... Sec.	Hampton.
Hope	Hope	William Henwood ..... Pres.	Welcome.
	Perrytown	Fred. Currelley ..... Sec.	Canton.
NORTHUMBERLAND:			
Brighton	Brighton	C. Richmond ..... Sec.	Hilton.
	Brighton and Murray	J. C. Dunn ..... Sec.	Wooler.
	Codrington	J. Darling ..... Sec.	Codrington.
	Strong & Co	Hugh Strong & Co ..... Props.	Hilton.
Cramahe	Castleton	A. W. Huyck ..... Sec.	Castleton.
	Knight's	W. M. Knight	Dundonald.
	Morganston	W. B. Huyck ..... Sec.	Morganston.
Haldimand	Haldimand*	John Grimison	Colborne.
	Spring Valley	Alex. G. McDonald	Burnley.
Hamilton	Baltimore	Samuel Philp	Baltimore.
	Crown	Richard Cullis ..... Sec.	Camborne.
	North Star	John C. Rosevear ..... Sec.	Cold Springs.
Murray	Fountain	Orton Moran ..... Pres.	Frankford.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
NORTHUMBERLAND—*Continued.*			
Murray	Maple Leaf, B	T. S. Irvine	do
	Queen's *	W. A. Hendrick	Stockdale.
Percy	Brickley *	Felix Convey	Brickley.
	Pine Grove*	Patrick Collins	Campbellford.
	Roseneath	Dennis Keogan ..... Sec.	Hastings.
	Warkworth	W. T. Wiggins	Warkworth.
Seymour	Brae	Gilbert Bedford	Campbellford.
	Crow Bay	Wm. Petherick, jr ..... Sec.	Crow Bay.
	Forest	Alex. Rannie	Menie.
	I. X. L	John Govan ..... Sec.	Campbellford.
	Menie*	James Stewart ..... Sec.	Menie.
	Meyersburg *	George McGrath ..... Sec.	Campbellford.
	Royal	Robert Cock ..... Sec.	do
	Rylstone	David Allan ..... Sec.	Rylstone.
	Seymour West	Wm. West ..... Sec.	Campbellford.
	Stanwood	J. B. Peoples ..... Sec.	Preneveau.
	Trent Bridge	John Lee	Trent Bridge.
	Valley	John Clark ..... Sec.	Campbellford.
	Woodlands	Fred Macoun	do
PRINCE EDWARD:			
Ameliasburg	Lake (Creamery)	John Sprague	Ameliasburg.
	Mountain View	John Potter ..... Pres.	Mountain View.
	Victoria*	Wm. Smith	Consecon.
Athol	Cherry Valley	Luther Platt ..... Sec.	Cherry Valley.
Hallowell	Allisonville	James Calnan ..... Sec.	Allisonville.
	Bloomfield	David S. Hubbs ..... Sec.	Bloomfield.
Hillier	Hillier	James E. Noxon	Hillier.
Marysburg, N	Lake View	G. N. Rose ..... Sec.	Waupoos.
	Union	Robert Davison ..... Sec.	Picton.
Marysburg, S	Black Creek	Albert Love ..... Sec.	Milford.
	Point Traverse	Joseph Hartgrove ..... Sec.	South Bay.
	Royal Street	W. H. Sloan ..... Sec.	Milford.
Sophiasburg	Big Island	Ryerson Rankin ..... Sec.	Demorestville.
	Elm Brook*	Richard Benson	Picton.
	Grape Vale*	J. Roblin	Northport.
	Maple Leaf	Alfred Foster	Fish Lake.
	Quinté	D. B. Solmes ..... Pres.	Solmesville.
	Switzer's	Thomas Wright	Gilbert's Mills.
LENNOX & ADDINGTON:			
Adolphustown	Adolphustown	B. & P. Platt ..... Props.	Adolphustown.
Amherst Island	Stella	Wm. H. Montray ..... Sec.	Stella.
Camden East	Camden, East	Edward Hinch	Camden East.
	Centreville	Wm. Whelan	Centreville.
	Enterprise *	Thomas Clancey	Enterprise.
	Moscow	John M. Hodgson	Sunbury.
	Newburgh	J. B. Aylesworth	Newburgh.
Ernesttown	Empey	P. E. R. Miller ..... Sec.	Switzerville.
	Odessa	James C. Fraser	Odessa.
	Union, Bath	W. R. Gordanier	Morven.
	Wilton	Robert Metzler ..... Prop.	Odessa.
Fredericksburg, N	Napanee	W. N. Dollar ..... Sec.	Napanee.
	Phœnix	W. J. Mellow ..... Sec.	Gretna.
Fredericksburg, S	Conway	Wm. Phippen	Conway.
	Sillsville	Wm. H. Rikely	Hayburn.
Richmond	Forest Mills	Elijah Storr ..... Sec.	Leinster.
	Selby	Ira B. Hudgins ..... Sec.	Selby.
Sheffield	Sheffield	Daniel E. Rose ..... Sec.	Tamworth.
FRONTENAC:			
Bedford	Salem, Fermoy	Daniel P. Alguire	Westport.
Clarendon and Miller	*	Dawson & Wood ..... Props.	Plevna.
Hinchinbrooke	Iron Junction, Parham	John M. Hodgson	Sunbury.
Kingston	Argan *	James Dowling ..... Salesman.	Mt. Chesney.
	Collins Bay	Allen Smith ..... Sec.	Westbrook.
	Glenburnie	Robert Vair ..... Prop.	Glenburnie.
	Glenvale	Joseph Cramer	Glenvale.
	Lake Shore	Phillip E. Ward	Kingston.
	Maple Grove	F. P. Grass	do

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
FRONTENAC.—*Con.*			
Kingston	Pious Hollow *	Joseph Fowler	Mt. Chesney.
	Union	Joshua Knight	Elginburg.
Loughborough	Forest *	John Moreland	Sydenham.
	Live and Let Live	John M. Hodgson	Sunbury.
	Perth Road	Wm. Guthrie	Perth Road.
Pittsburg	Ellerslie	Hugh Cowan	Gananoque.
	Morning Star	Daniel McLean	Kingston.
	Pine Grove	John Dillon	Brewer's Mills.
	Rose Hill	James R. Barnes ....Sec.	Dufferin.
Portland	Bradshaw	Robert McLean....Sec.	Harrowsmith.
	Hartington	Thomas Leonard....Sec.	Hartington.
Storrington	Verona Battersea	John M. Hodgson	Sunbury.
	Cold Spring	C. W. Langwith	do
	Lake Shore*	Enoch Ferris	Inverary.
	Lake View	Wm. Barr	do
	Sand Hill	George Sands	Sunbury.
	Storrington*	L. W. Murphy	Brewer's Mills.
	Sunbury	John M. Hodgson	Sunbury.
	Washburn	Henry McBroom	Washburn.
	Duff's	Alex. Ritchie....Sec.	Inverary.
Wolfe Island	Elm Grove	R. J. Spoor	Wolfe Island.
LEEDS AND GRENVILLE:			
Augusta	Central Augusta	James Connell & Co	Algonquin.
	Charleville, Domville	J. W. Place	Maynard.
	Victory No. 1	J. S. Ralph	North Augusta.
	Maple Grove	C. H. Bissell	Algonquin.
	Roebuck	James Keating	Roebuck.
	St. Lawrence Star	John McLean....Sec.	Maitland.
	South Branch	Thomas E. Meech	North Augusta.
	Throoptown	E. J. McMahon	Throoptown.
	Willow	Andrew McNish....Sec.	Brockville.
	Bresee's*	M. F. Bresee	Philipsville.
Bastard & Burgess, S.	Farmer's Own	James Barlow	Delta.
	People's Mutual	T. G. Morris....Sec.	Forfar.
	Plum Hollow No. 1	Ambrose Derbyshire	Plum Hollow.
	Plum Hollow No. 2*	Samuel Jackson	do
	Poole's	M. J. DeWolfe	Freeland.
	Roger's	Alex. Rogers	Newboyne.
	Sheldon's	Elijah Bowser	Delta.
	Smith's Valley	James Smith	Harlem.
	Philipsville	R. J. Whaley....Sec.	Philipsville.
	Portland	G. S. Austin	Portland.
Crosby, N	Ardmore, Westport	D. P. Alguire	Westport.
	Clear Lake Union	Thomas Leggatt	Elgin.
Crosby, S	Dominion	E. V. Halladay	do
	Elgin Union	B. L. Halladay	do
	Maple Grove	Sidney M. Halladay	do
	Rockdale	J. R. Dargavel	do
	Singleton	John Mustard	Newboro.
	Cherry Ridge	Julia Knowlton	do
	Morton	Robert H. Somerville	Morton.
Edwardsburg	Armstrong, Spencerville	Thomas J. Bennett	Spencerville.
	Thompson's Nos. 1, 4 & 5.	W. H. Thompson	Pittston.
	Lorne, Millar Spencerville	Millar & Ferguson	Spencerville.
	Glensmail, Johnstown Mainsville, Shanley	Wm. Eager	South Mountain.
Elizabethtown	Anvern*	A. C. Johns	Fairfield East.
	Barlow	Chas. L. McBrady ....Prop.	Addison.
	Excelsior	J. H. Davidson	Brockville.
	Kilborn Springs	W. E. Kilborn	do
	Maple Grange	M. F. Hughes	Lyn.
	Orchard Valley	James White. ....Prop.	Lutherville.
	Royal Dominion	T. W. Horton	New Dublin.
	Star	C. M. Taylor....Sec.	Lyn.
	Victor	Chas. W. deCarle....Sec.	Brockville.
	*	C. J. Gilroy	Glenbuell.
	*	Thomas Smith	Greenbush.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
LEEDS & GRENVILLE—*Continued.*			
Elmsley, S	Golden Creamery*	E. R. Moorehouse	Smith's Falls.
	Maple Leaf	Michael O'Mara	Lombardy.
Escott, F	Escott Union*	W. H. Warren ..... Sec.	Rockfield.
	Holland Union	H. C. Lynch ..... Sec.	Escott.
	Junetown B	James Herbison	Caintown.
	Junetown, A†	Francis Fortune ..... Sec.	do
	Springfield Union	James B. Moxley ..... Sec.	Escott.
	Thousand Island	C. Cornwall ..... Sec.	Rockport.
Gower, S	Heckston	Wm. Eager	South Mountain.
Kitley	Newbliss	Abram Coad	Toledo.
	Robinson	Alex. Cameron	Smith's Falls.
	Silver Creek	George S. Stratton ..... Sec.	Toledo.
Leeds & Lansdowne, F	Bruce	J. S. Landon ..... Sec.	Lansdowne.
	Deer Lake *	John Cowan	do
	Dulcemain*	Herbert Horton	Warburton.
	Fairfax	D. R. Latimer	Lansdowne.
	Gananoque Junction*	W. F. Chapman	Gananoque.
	Lorne	George Cliffe	do
	Morton	Robert Wilson ..... Sec.	Wilstead.
	People's*	Henry McCalpin	South Lake.
	Rapid Valley*	S. J. Johnston ..... Sec.	Lansdowne.
	St. Lawrence	Peter M. Wood ..... Sec.	Ivy Lea.
	Silver Springs	Wm. Richardson	Gananoque.
	South Lake	James Birmingham	do
	Tilley	James W. Grier	Lansdowne.
	Warburton	John Cook ..... Sec.	Warburton.
	Thompson's No. 10	W. H. Thompson	Pittston.
Leeds & Lansdowne, R	Beech Grove	F. B. Sheffield	Lyndhurst.
	Cold Glen	John Willoughby	Ellisville.
	Washburn	J. E. Johnson ..... Sec.	Soperton.
	Lyndhurst	John C. Stafford	Lansdowne.
	Oak Leaf*	Ormond Green	Oak Leaf.
	Seeley's Bay	Robert Gardiner	Seeley's Bay.
	Springvale*	Wm. W. Hicock	Sweet's Corners.
Oxford	Bishop's Mills*	Alexander Bros	Bishop's Mills.
	Brown's Bridge	Wm. Eager	South Mountain.
	Burritt's Rapids	Andrew Carson ..... Sec.	Burritt's Rapids.
	Kemptville*	Orlando Bush	Kemptville.
	Oxford Mills	Thos. E. Meech	North Augusta.
	Anderson	James Anderson	Oxford Mills.
Wolford	Old Fairfield	Rufus Bissell	Easton's Corners.
	Victory No. 2	J. S. Ralph	North Augusta.
Yonge, F	Lillie Springs	R. W. Littlejohn ..... Sec.	Lyn.
	Mallory's	A. W. Mallory ..... Sec.	Mallorytown.
	Leeds County	Chas. S. Snider	Lyn.
	Leeds Union	A. H. McLean	do
Yonge, R	Elbe	Cyrenus Stowell	Addison.
	Farmersville*	S. B. Williams	Farmersville.
	Golden Spring	Albert Morris	do
DUNDAS:			
Matilda	Lord Dufferin*	M. Hunt	Lyn.
	Lady Dufferin*		
	Dundela*	C. W. Smith	Dundela.
	Farmer's	G. I. Carman ..... Sec.	Iroquois.
	Morrisburg	Thomas Moorehouse ..... Sec.	Morrisburg.
	Rowena	R. M. Bouck	Irena.
	Iroquois*	W. M. Doran	Iroquois.
	*	Alex. Strader	Brinston's Corners.
Mountain	Thompson's No. 2, 3 & 6	W. H. Thompson	Pittston.
	Thompson's No. 9		
	Hallville	Wm. Eager	South Mountain.
	South Mountain		
Williamsburg	Archer	G. C. Tracy	Archer.
	Elma *	John N. Logan	Elma.
	Hoasic *	Alonzo McNairn	Hoasic.
	Jackson Hussey	Isaiah Barkley ..... Sec.	Dunbar.
	Kendrick & Carlyle	Wm. R. Allison ..... Sec.	do

† Received too late for tabulation.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
DUNDAS.—*Con.*			
Williamsburg	Armstrong's Bridge	Wm. Eager	South Mountain.
	Caughnawaga		
	Maple Ridge		
	Riverside		
Winchester	Ormond	do	do
	West Winchester		
	Pioneer No. 1	W. H. Byers	Morewood.
STORMONT:			
Cornwall	Eamer's Corners	H. R. Kirk	Cornwall.
	Black River	P. N. Tait	Mille Roches.
	Mille Roches		
	St. Andrews		
	Roxborough		
	Grant's Shop	Hugh Leitch	Eamer's Corners.
	Cornwall Centre	James L. Groves	Cornwall Centre.
	Moulinette	Henry Harrison ....Sec.	Moulinette.
	Silmser,* North Branch*.	D. M. Macpherson....Prop.	Lancaster.
Finch	Tayside Nos. 3 & 4	Moffatt & Bennett	Athole.
	Berwick	James Small ....Prop.	Berwick.
	Pioneer No. 2	W. H. Byers	Morewood.
Osnabruck	Aultsville	Alex. Summers ....Sec.	Aultsville.
	Dickenson's Landing*	George Shaver	Wales.
	Dixson	James L. Hawn	Dixson.
	Farran's Point	Robert Vallance	Osnabruck Centre.
	Logan & Carr	Eli Robinson ....Sec.	Grantley.
	Lunenburg	H. McEwen ....Sec.	Lunenburg.
	North Osnabruck	Edgar Alguire	North Valley.
	White Clover	George H. Jackson ....Sec.	Gallingertown.
	Tayside No. 6	Moffatt & Bennett	Athole.
Roxborough	Tayside Nos. 1 & 2		
	Avonmore*	D. M. Macpherson	Lancaster.
	Roxborough, 1st* & 4th*		
GLENGARRY:			
Charlottenburg	Fraser's Point	D. A. Fraser	South Lancaster.
	Spring Run	A. B. McLennan	Lancaster.
	Craig, Ferguson	D. M. Macpherson	do
	Fraserfield, Martintown		
	Glen Roy, South Branch		
	Summerstown, Glen		
Kenyon	Dominionville	do	do
	Kennedy, 3rd Kenyon		
	Loch Garry, Maxville		
	St. Elmo, Town Hall		
Lancaster	Bridge End	do	do
	Experimental		
	Glen Norman, Home		
	3rd & 5th Lancaster (2)		
	Thistle, No. 1	Sangster & McCuaig	Bainsville.
Lochiel	Cameron, Laggan	D. M. Macpherson	Lancaster.
	Lorne, McCrimmon		
	Maple Grove, Nos. 1 & 3	James Irvine	Dalkeith.
PRESCOTT:			
Alfred	Alfred	Fred. Langrell	Alfred.
Hawkesbury, E.	E. Hawkesbury, Nos. 1 & 2.	James Hurley ....Sec.	Barb.
	Maple Leaf, Nos. 1 & 2	J. B. A. Mongenais	Rigand, Que.
	Monolea, Nos. 1 & 4	Thomas Ross & Son....Props.	Little Rideau
	Golden Hill*	Samuel Stephens	Vankleek Hill.
	Maple Grove, No. 2	James Irvine	Dalkeith.
	*	D. B. Wyman	Chute à Blondeau.
Hawkesbury, W.	Three factories*	M. McCuaig	Vankleek Hill.
	Two factories*		
	Hawkesbury*	D. M. Macpherson	Lancaster.
	Spring Grove	S. N. Morrison	Henry.
	*	D. McLeod	Vankleek Hill.
Longueuil	Cassburn	James Cross	Cassburn.
Plantagenet, N.	Treadwell	Gideon, Senecal ....Prop.	Treadwell.
Plantagenet, S.	Prescott Star*	D. Sabourin	St. Isidore.
	Riceville*	Alex. McLean ....Sec.	Riceville.
	Tayside No. 5*	Moffatt & Bennett	Athole.
	*	Stephen Surch	Fournier.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
RUSSELL:			
Cambridge	St. Albert	Damase Meilleur	St. Albert.
Clarence	Clarence		
Cumberland	Tayside, Nos. 7, 8 & 9	Moffatt & Bennett	Athole.
Russell	Bolton	Wm. Eager	South Mountain.
CARLETON:			
Goulbourn	Ottawa Valley	Adam Abbott ..... Sec.	Hazledean.
	Golden	Lewis Morton ..... Sec.	Ashton.
Gower, N.	North Gower	Edward Kidd	North Gower.
	Wellington	Wm. Eager	South Mountain.
Huntley	Carp	Edward Kidd	North Gower.
Nepean	Twin Elm	Wm. Eager	South Mountain.
Osgoode	Kenmore, Marvelville		
	Kidd's	Edward Kidd ..... Sec.	North Gower.
	Osgoode No. 10	R. J. Dow	Metcalfe.
	Pooles	A. Lindsay ..... Sec.	Manotick.
RENFREW:			
Horton	Maple Home	Robert McLaren ..... Sec.	Renfrew.
Ross	Forester's Falls	Wm. Grant	Forester's Falls.
Westmeath	Eureka	Alex. Elliott	Beachburg.
Stafford	Micksburg	John L. Smith	Micksburg.
LANARK:			
Bathurst	Bathurst Mutual	James Patterson	Manion.
	Fallbrook Mutual	W. G. Cameron ..... Treas.	Fallbrook.
	Harper	A. B. Campbell ..... Treas.	Harper.
	Scotch Line*	Samuel Wilson	Allan's Mills.
Beckwith	Valley Queen	Peter McEwen ..... Treas.	Franktown.
	Black's Corners	John McDonald ..... Sec.	Carleton Place.
Dalhousie	Elphin	D. A. McDougall	Elphin.
Drummond	Balderson*	Andrew Allan	Balderson.
	Dexter†	Thomas Hands ..... Sec.	Perth.
Elmsley, N.	Drummond Centre	Adam Armstrong ..... Sec.	McGarry.
Lanark	Mississippi, Riverside	C. A. Matheson ..... Sec.	Perth.
	Lone Star	R. A. Brown	Port Elmsley.
	Boyd's	Alf. Hammond	Innisville.
	Fairplay	Thomas Jackson ..... Sec.	do
	Hopetown*	Duncan Stewart	Hopetown.
Montague	Rideau Valley	John Kerr ..... Sec.	Merrickville.
	Roseville	Hugh Clark	Montague.
	Thompson's, No. 7	W. H. Thompson	Pittston.
Ramsay	Mississippi Pride	James Robertson	Almonte.
	Clayton	John Dunlop	Clayton.
Sherbrooke, S	Lakeview	D. P. Alguire	Westport.
	Maberly	Henry Rigney ..... Sec.	Maberly.
VICTORIA:			
Emily	Downeyville	Eugene Shine ..... Sec.	Downeyville.
Mariposa	Mariposa	David Rogers	Linden Valley.
	Little Britain	Samuel Allin ..... Sec.	Toronto.
Ops	Reaboro'*	John Holbert	Reaboro.
	North Ops	J. F. Currins	Lindsay.
	West Ops	Thomas Fleury ..... Sec.	do
Verulam	Star	Morgan Johns ..... Sec.	Bobcaygeon.
	Bobcaygeon	J. L. Read ..... Sec.	do
PETERBOROUGH:			
Asphodel	Norwood	Hugh Spence	Norwood.
	Westwood	John Lancaster	Westwood.
Belmont & Methuen.	Belmont	J. B. Peoples ..... Sec.	Preneveau.
	Blairton	E. D. Boyd ..... Pres.	Blairton.
	Melrose Abbey	Samuel Elliott ..... Sec.	Norwood.
Douro	Central	M. D. Sullivan ..... Sec.	South Douro.
	Glenthorn	W. Garbutt ..... Sec.	Peterborough.
	Pine Grove	E. J. Abbott ..... Sec.	Lakefield.
	Lakefield	J. W. Moore	do
Dummer	South Dummer	S. S. Spence	South Dummer.
	Warminster	S. R. Payne	Warsaw.
	Warsaw	Alex. Smith	do
Ennismore	Myrtle	Thos. Galvin ..... Sec.	Ennismore.
Otonabee	Keene	D. P. McFarlane	Keene.
	Shearer	John Miller ..... Sec.	Lang.

CHEESE FACTORIES.

County and Township.	Name of Factory.	Name of Secretary or other Officer.	Post Office Address.
PETERBOROUGH—*Con.*			
Otonabee	Otonabee Union	George Stewart	Peterborough.
Smith	Cherry Grove	J. G. Armstrong	do
	Lily Lake	James Middleton, jr ....Sec.	do
	Normanhurst*	Andrew Young	do
	North Smith	M. E. Sanderson ....Pres.	Selwyn.
	Trewern	B. Davies	Lakefield.
HASTINGS:			
Dungannon	L'Amable	J. R. Tait....Sec.	L'Amable.
Elzevir	Elzevir	Wm. Wiggins	Queensboro.
	Bridgewater	Dennis Kehoe	Bridgewater.
Herschel	Maynooth	J. B. Cleak	Maynooth.
Hungerford	Bogart, Kervine	P. Murphy....Pres.	Stoco.
	Cedar*	Andrew Kirk	Chapman.
	Hungerford	Thomas Graham....Pres.	Tweed.
	Roblin*	W. A. Adams	Chapman.
	Thomasburg*	M. Robinson	Thomasburg.
	Victoria*	Robert Gordon	Tweed.
	Marlbank	Wm. Burley....Sec.	Marlbank.
Huntingdon	Ivanhoe	John B. Fox ....Pres.	Ivanhoe.
	Moira†	J. G. Foster....Pres.	Moira.
	Glen, West Huntingdon	James Haggerty....Pres.	West Huntingdon.
	White Lake	Hector Wood	Ivanhoe.
	Allen Settlement*	Wm. J. Allen	Cooper.
Madoc	Alexandria	John Caskey ....Pres.	Madoc.
	Brook Valley	Richard Farrell	do
	Cold Spring	A. M. Ketcheson	do
	Golden	James English	do
	Spring Creek	Wm. Thompson....Pres.	Remington.
	Spring Hill	Donald McKenzie	Madoc.
	Cook's*	Ira J. Cook	Marmora.
Marmora and Lake	Marmora	Wm. Hilton....Pres.	do
	Diamond	Hiram Conley	Stirling.
Rawdon	Enterprise	Jas. Baker ....Pres.	Sine.
	Evergreen	Wm. Rogers....Pres.	Stirling.
	Harold*	S. S. Vandervoort	Harold.
	Maple Leaf	James McComb ....Pres.	Big Springs.
	Plum Grove	Wilmot Vandervoort ....Pres.	Wellman's Corners.
	Springbrook*	Thomas J. Thompson	Springbrook.
	Stirling	Joseph Doak	Stirling.
Sidney	Eclipse*	James Bird	Foxboro.
	Frankford	James Jordan	Frankford.
	Front of Sidney *	Hon. Robert Reid	Belleville.
	Grove*	Charles Chesebro ....Pres.	Frankford.
	Johnstown	W. King Mabey	Glen Miller.
	Sidney	J. R. Brower....Pres.	Belleville.
	Sidney Town Hall	S. T. Wilmot....Pres.	Wallbridge.
	Springfield	John Steele	Trenton.
Thurlow	Ashley	F. W. Brenton	Foxboro.
	Bronk	Jas. Boldrick....Pres.	Canifton.
	East Hastings	W. A. Chapman	Roslin.
	Halloway	P. R. Daly ....Pres.	Halloway.
	Thurlow	Harford Ashley....Salesman.	Belleville.
	Union	F. Brenton....Pres.	Corbyville.
Tyendinaga	Albert*	Michael Corrigan	Albert.
	Empey Hill*	Peter Gould	Napanee.
	Melrose	Chas. Anderson....Sec.	Melrose.
	Milltown, Mountain	R. L. Lazier	Shannonville.
	Read	Alex. Coulter....Sec.	Myrehall.
MUSKOKA:			
Chaffey	Huntsville	J. D. Reid ....Sec.	Huntsville.

CREAMERIES IN OPERATION IN ONTARIO DURING 1887, WITH NAME AND POST OFFICE ADDRESS OF THE SECRETARY OF EACH CREAMERY.

County and Township.	Name of Creamery.	Name of Secretary or other Officer.	Post Office Address.
ESSEX :			
Colchester, N.	*	Sinclair & Clarke..... Props.	Essex Centre.
KENT :			
Raleigh	Cedar Springs	Taylor & Williamson	Cedar Springs.
LAMBTON :			
Plympton	Wanstead	Archibald Wark	Wanstead.
	Wyoming	John Hartley	Wyoming.
HURON :			
Goderich	*	Wm. Herbison	Clinton.
Hullett	Londesborough	John Hannah	Seaforth.
McKillop	Seaforth		
Stanley	Brucefield	Hugh McCartney	Brucefield.
BRUCE :			
Brant	Elmwood	Menno Kaufman ..... Sec.	Elmwood.
	Walkerton	G. J. Brill	Walkerton.
Carrick	Deemerton	Peter Lafrance .....Sec.	Deemerton.
Culross	Formosa	Ambrose Zettel.....Sec.	Formosa.
	Teeswater	S. R. Brill	Teeswater.
Huron	Ripley	Wm. Brown .....Sec.	Ripley.
Kincardine	Armow	S. Avery .....Sec.	Armow.
Kinloss	Whitechurch	H. D. Henderson.....Sec.	Whitechurch.
GREY :			
Egremont	Dromore	John Philp	Dromore.
	Egremont	David Allan.....Sec.	Holstein.
Sydenham & Derby.	Pleasant View	James Struthers	Owen Sound.
Normanby	Ayton	Isaac Wenger	Ayton.
Sullivan	Maple Leaf	John Critchley	Chatsworth.
Derby	Rock Spring	J. F. Agnew	Owen Sound.
SIMCOE :			
Tiny	*	John Campbell	Penetanguishene.
MIDDLESEX :			
Williams, W	Fairview	Erastus Miller	Parkhill.
PERTH :			
Blanshard	Kirkton	John Hannah	Seaforth.
Easthope, N.	Silver Creek	Geo. Wettlaufer.....Sec.	Amulree.
Ellice	Kinkora	Chas. Stock ..... Prop.	Stratford.
WELLINGTON :			
Guelph	Agricultural College	President of College	Guelph.
WATERLOO :			
Waterloo	*	R. O. Dobbin	Breslau.
Wilmot	Nith Valley (cheese)	Henry D. Tye .....Sec.	Haysville.
Wellesley	Crosshill	Aaron Good	Blair.
Woolwich	St. Jacobs	W. H. Bauman.....Sec.	Waterloo.
HALTON :			
Nassagaweya	Eden Mills	John Ramsey	Eden Mills.
DURHAM :			
Manvers	Union	W. R. Parker	Bethany.
PRINCE EDWARD :			
Ameliasburg	Willow Glen	L. V. Bowerman.....Sec.	Bloomfield.
Hallowell	Sprague (cheese)	John Sprague	Ameliasburg.
LEEDS & GRENVILLE :			
Edwardsburg	Ventnor.	John McAuley	Ventnor.
DUNDAS :			
Matilda	Rutherford's*	W. D. Rutherford	Iroquois.
Winchester.	Cassbridge	D. Halliday .....Sec.	Cassbridge.
GLENGARRY :			
Charlottenburg	Gore	D. F. McLennan	Camerontown.
RUSSELL :			
Cambridge	*	Varrance Landry	St. Albert.
Russell	*	L. Dupuis	Embrun.

NOTE.—No private dairies are included in this list.

STATISTICS OF

LIVE STOCK AND DAIRY PRODUCTS.

HORSES.

TABLE No. I.—Showing by County Municipalities and groups of Counties the number of Working Horses, Breeding Mares and Unbroken Horses in Ontario in 1887; also the totals for the five years 1883-7

Counties.	Working Horses.	Breeding Mares.	Unbroken Horses.	Totals.				
				1887.	1886.	1885.	1884.	1883.
Essex	6,750	2,895	3,789	13,434	14,368	14,112	14,385	14,362
Kent	8,770	4,038	5,640	18,448	18,464	17,184	15,949	17,329
Elgin	7,518	2,712	3,875	14,105	13,849	13,675	13,266	13,904
Norfolk	6,004	2,369	3,680	12,053	11,610	11,491	11,540	12,110
Haldimand	5,405	2,161	3,059	10,625	10,786	10,394	10,841	9,787
Welland	4,995	1,565	2,314	8,874	8,872	8,552	8,135	8,432
Totals	39,442	15,740	22,357	77,539	77,949	75,408	74,116	75,924
Lambton	6,713	2,583	4,092	13,388	13,482	13,127	13,726	12,493
Huron	12,399	6,191	8,365	26,955	26,848	26,478	25,460	26,831
Bruce	9,642	3,934	6,017	19,593	19,549	18,584	17,228	19,100
Totals	28,754	12,708	18,474	59,936	59,879	58,189	56,414	58,424
Grey	12,171	4,790	7,615	24,576	23,803	23,402	21,758	23,292
Simcoe	12,047	4,439	6,712	23,198	23,025	22,652	21,558	22,585
Totals	24,218	9,229	14,327	47,774	46,828	46,054	43,316	45,877
Middlesex	13,200	5,417	8,169	26,786	26,279	26,651	25,066	25,649
Oxford	9,092	3,285	4,693	17,070	17,227	17,149	16,151	17,721
Brant	5,100	1,882	2,759	9,741	9,375	8,824	8,860	8,838
Perth	9,194	4,127	5,529	18,850	17,799	17,906	17,420	18,535
Wellington	10,945	4,604	6,166	21,715	20,828	20,273	19,351	20,848
Waterloo	7,131	2,216	2,835	12,182	12,101	12,066	11,742	12,177
Dufferin	4,399	1,646	2,140	8,185	7,845	8,402	7,734	7,846
Totals	59,061	23,177	32,291	114,529	111,454	111,271	106,324	111,614
Lincoln	5,006	1,387	2,354	8,747	9,195	8,304	8,509	8,639
Wentworth	6,696	2,082	3,227	12,005	11,961	11,698	11,561	11,698
Halton	4,493	1,340	2,160	7,993	8,742	8,125	8,152	7,943
Peel	6,145	2,620	3,355	12,120	11,860	11,378	10,983	11,256
York	11,519	5,265	7,318	24,102	24,069	24,259	22,424	23,621
Ontario	8,946	4,047	5,543	18,536	18,021	18,148	17,791	18,789
Durham	7,873	2,513	4,276	14,662	15,152	14,154	13,916	14,013
Northumberland	9,216	2,758	4,773	16,747	16,684	15,911	15,425	15,069
Prince Edward	5,536	2,253	3,012	10,801	10,520	10,101	9,224	9,917
Totals	65,430	24,265	36,018	125,713	126,204	122,078	117,985	120,945
Lennox and Addington	5,728	1,617	3,059	10,404	10,136	9,870	9,244	9,519
Frontenac	4,686	1,676	2,837	9,199	9,659	8,791	8,155	8,768
Leeds and Grenville	9,871	3,031	6,032	18,934	18,396	17,340	16,518	17,713
Dundas	3,865	1,332	2,302	7,499	7,648	7,691	6,976	7,711
Stormont	3,106	1,274	1,831	6,211	6,665	6,609	5,808	6,392
Glengarry	3,880	2,034	2,768	8,682	8,263	8,293	7,882	8,709
Prescott	3,078	1,619	2,250	6,947	6,532	7,039	6,211	7,128
Russell	2,076	1,031	1,448	4,555	4,351	4,539	4,404	5,402
Carleton	7,253	2,239	3,460	12,952	13,330	12,802	12,819	12,875
Renfrew	6,026	1,823	2,668	10,517	10,438	10,120	9,721	9,848
Lanark	5,735	1,628	2,637	10,000	9,810	9,844	9,151	9,803
Totals	55,304	19,304	31,292	105,900	105,228	102,938	96,889	103,868
Victoria	6,668	2,053	3,474	12,195	11,787	12,249	11,184	13,173
Peterborough	5,766	1,688	2,897	10,351	9,630	10,307	9,015	9,170
Haliburton	593	192	225	1,010	807	876	793	851
Hastings	9,154	2,703	4,525	16,382	15,842	15,616	16,420	16,569
Totals	22,181	6,636	11,121	39,938	38,066	39,048	37,412	39,763
Muskoka	1,135	466	540	2,141	1,983	1,893	1,725	1,644
Parry Sound	372	158	235	765	838	863	981	887
Algoma	607	224	295	1,126	1,220	1,067	791	1,187
Totals	2,114	848	1,070	4,032	4,041	3,823	3,497	3,718
The Province—1887	296,504	111,907	166,950	575,361	.....	.....	.....	.....
1886	300,682	107,000	161,967	.....	569,649	.....	.....	.....
1885	311,587	95,963	151,259	.....	.....	558,809	.....	.....
1884	303,474	93,910	138,569	.....	.....	.....	535,953	.....
1883	349,552	87,380	123,201	.....	.....	.....	.....	560,133

CATTLE.

TABLE No. 11.—Showing by County Municipalities and groups of Counties the number of Oxen, Milch Cows, Store Cattle and young and other Cattle in Ontario in 1887; also the totals for the five years 1883-7.

Counties.	Working Oxen.	Milch Cows.	Store Cattle over two years.	Young and other Cattle.	Totals. 1887.	1886.	1885.	1884.	1883.
Essex	301	12,433	6,604	15,037	34,375	35,344	33,859	33,626	30,247
Kent	45	18,514	12,913	24,738	56,210	59,821	56,699	54,511	53,504
Elgin	255	17,626	11,209	20,682	49,772	50,695	48,744	48,423	48,021
Norfolk	573	15,281	5,783	13,336	34,973	35,686	36,666	34,725	33,742
Haldimand	141	13,114	6,003	14,864	34,122	35,614	32,626	31,121	27,959
Welland	264	9,086	3,696	9,836	22,882	22,023	21,548	19,610	19,586
Totals	1,579	86,054	46,208	98,493	232,334	239,183	230,142	222,016	213,059
Lambton	80	17,189	13,790	25,915	56,974	57,807	55,626	61,236	52,637
Huron	386	29,895	27,984	47,285	105,550	107,815	107,070	104,649	100,888
Bruce	791	26,028	16,351	39,267	82,437	85,009	81,604	80,870	78,822
Totals	1,257	73,112	58,125	112,467	244,961	250,631	244,300	246,755	232,347
Grey	1,693	31,357	21,978	46,636	101,664	105,979	105,615	105,762	97,797
Simcoe	693	23,171	15,701	28,928	68,493	72,317	73,458	70,702	66,464
Totals	2,386	54,528	37,679	75,564	170,157	178,296	179,073	176,464	164,261
Middlesex	47	34,435	30,303	42,623	107,408	117,397	113,183	113,868	104,803
Oxford	178	31,672	12,828	25,129	69,807	73,528	71,871	70,388	69,872
Brant	47	9,749	4,763	11,966	26,525	28,918	27,307	25,529	23,845
Perth	156	26,077	17,306	36,077	79,616	78,482	79,491	76,413	73,411
Wellington	464	25,862	15,778	36,934	79,038	80,476	78,555	78,100	72,987
Waterloo	69	13,429	5,825	17,388	36,711	38,320	36,992	36,655	34,789
Dufferin	249	9,422	7,299	13,281	30,251	30,808	31,408	30,932	28,042
Totals	1,210	150,646	94,102	183,398	429,356	447,929	438,807	431,885	407,749
Lincoln	144	8,785	3,533	9,480	21,942	21,451	21,194	19,319	19,479
Wentworth	171	13,933	5,155	13,475	32,734	34,127	32,748	31,362	29,493
Halton	349	10,235	6,151	10,913	27,648	29,374	29,488	27,070	24,379
Peel	14	11,778	8,268	12,586	32,646	33,723	31,328	30,351	26,681
York	177	20,567	9,868	17,340	47,952	50,825	51,029	47,425	45,662
Ontario	118	16,031	11,829	23,193	51,171	51,984	50,007	50,911	47,911
Durham	170	12,198	7,926	15,168	35,462	39,344	36,574	37,264	34,173
Northum'land.	295	19,047	8,766	15,604	43,712	44,368	44,893	42,638	40,109
Prince Edw'd.	81	9,930	2,027	7,178	19,216	21,555	19,041	17,335	16,326
Totals	1,519	122,504	63,523	124,937	312,483	326,751	316,302	303,675	284,213
Lennox & Ad.	449	15,045	6,516	13,420	35,430	35,137	32,290	29,256	25,747
Frontenac	444	15,293	5,372	11,580	32,689	36,847	30,682	31,177	30,687
Leeds & Gren.	166	42,087	10,260	22,579	75,092	78,899	75,989	74,680	70,973
Dundas	29	16,516	3,037	8,735	28,317	29,288	28,460	26,512	26,265
Stormont	.....	14,698	2,034	6,814	23,546	25,028	26,659	22,842	23,157
Glengarry	.....	16,887	2,913	9,126	28,926	30,764	32,525	30,912	29,744
Prescott	43	11,015	3,428	6,611	21,097	23,273	23,893	20,819	19,434
Russell	.....	6,593	2,780	5,444	14,817	15,955	16,764	15,627	16,347
Carleton	20	20,380	9,118	18,031	47,549	48,817	45,176	45,133	43,468
Renfrew	169	16,227	7,489	17,360	41,245	43,045	44,665	42,468	44,383
Lanark	95	18,944	10,596	16,887	46,522	45,123	43,983	44,789	41,377
Totals	1,415	193,685	63,543	136,587	395,230	412,176	401,086	384,215	371,582
Victoria	210	12,925	9,864	16,340	39,339	37,411	40,710	37,014	34,631
Peterborough	487	12,737	7,536	13,576	34,336	33,716	36,640	32,735	31,145
Haliburton	458	2,121	1,049	2,913	6,541	6,301	6,499	6,246	5,711
Hastings	1,137	31,909	6,688	19,027	58,761	60,563	56,089	59,052	59,967
Totals	2,292	59,692	25,137	51,856	138,977	137,991	139,938	135,047	131,454
Muskoka	1,142	4,665	2,360	5,550	13,717	12,854	13,651	13,437	11,032
Parry Sound	408	1,426	843	2,002	4,679	5,113	6,131	6,435	6,761
Algoma	555	2,009	1,060	2,746	6,370	7,249	7,050	5,741	6,155
Totals	2,105	8,100	4,263	10,298	24,766	25,216	26,832	25,613	23,948
The Province. 1887	13,763	748,321	392,580	793,600	1,948,264	.....	.....	.....	.....
The Province. 1886	14,414	746,897	418,079	838,783	.....	2,018,173	.....	.....	.....
The Province. 1885	15,302	750,005	373,856	837,317	.....	.....	1,976,480	.....	.....
The Province. 1884	16,793	710,519	384,453	813,905	.....	.....	.....	1,925,670	.....
The Province. 1883	17,071	690,437	321,471	799,634	.....	.....	.....	.....	1,828,613

SHEEP.

TABLE No. III.—Showing by County Municipalities and groups of Counties the number of Coarse and Fine Woolled Sheep in Ontario in 1887; also the totals for the five years 1883-7.

Counties.	Coarse Woolled.		Fine Woolled.		Totals.				
	Over 1 year.	Under 1 year.	Over 1 year.	Under 1 year.	1887.	1886.	1885.	1884.	1883.
Essex	10,487	6,393	3,327	2,365	22,572	27,526	25,879	24,074	22,587
Kent	10,898	7,268	4,074	2,993	25,233	32,469	36,706	37,428	40,875
Elgin	14,952	10,704	3,560	2,650	31,866	30,068	34,854	46,753	44,957
Norfolk	9,577	6,702	3,865	3,157	23,301	27,177	28,875	32,997	34,397
Haldimand	12,440	9,026	3,764	2,475	27,705	29,945	32,809	38,545	35,797
Welland	8,421	4,453	5,071	4,228	22,173	24,053	27,595	25,735	23,769
Totals	66,775	44,546	23,661	17,868	152,850	171,238	186,718	205,532	202,382
Lambton	14,623	9,815	3,270	2,510	30,218	36,344	41,316	55,462	49,751
Huron	32,848	24,021	7,303	5,304	69,476	79,323	85,677	97,356	98,200
Bruce	36,633	22,880	6,525	3,727	69,765	76,109	83,190	86,176	86,538
Totals	84,104	56,716	17,098	11,541	169,459	191,776	210,183	238,994	234,489
Grey	51,893	33,958	9,127	6,577	101,555	111,784	122,431	130,775	119,132
Simcoe	31,082	17,082	10,782	7,091	66,037	77,621	84,882	82,709	73,758
Totals	82,975	51,040	19,909	13,668	167,592	189,405	207,313	213,484	192,890
Middlesex	21,343	16,428	4,613	3,621	46,005	52,192	61,468	72,194	81,563
Oxford	10,584	6,934	4,814	3,695	26,027	28,923	34,145	40,333	44,461
Brant	8,554	5,603	2,639	3,140	19,936	23,146	26,763	27,352	29,447
Perth	22,172	15,587	4,553	3,186	45,498	54,409	56,217	63,599	68,271
Wellington	32,496	20,871	7,836	5,735	66,938	75,999	87,412	94,515	88,367
Waterloo	12,012	7,390	6,920	4,040	30,362	35,674	40,722	40,601	42,204
Dufferin	12,253	7,643	2,814	1,114	23,824	29,806	36,282	35,204	30,526
Totals	119,414	80,456	34,189	24,531	258,590	300,149	343,009	373,798	384,839
Lincoln	4,581	3,526	3,224	2,465	13,796	18,919	18,241	19,304	20,273
Wentworth	9,054	7,092	2,889	2,180	21,215	24,987	25,648	28,605	30,435
Halton	7,999	5,880	2,014	1,483	17,376	18,857	21,099	22,795	21,470
Peel	11,212	6,622	3,006	1,933	22,773	27,849	26,676	29,412	27,937
York	15,022	8,179	8,283	5,455	36,939	47,063	51,871	49,438	52,031
Ontario	14,233	7,419	6,703	4,632	32,987	44,775	45,788	50,394	49,966
Durham	15,828	8,367	2,582	1,613	28,390	33,443	34,338	40,159	36,948
N'rthumb'd	16,838	9,433	3,163	2,036	31,470	32,587	38,785	39,738	36,217
Prince Ed	5,453	3,501	1,844	706	11,504	15,091	15,529	17,638	19,727
Totals	100,220	60,019	33,708	22,503	216,450	263,571	277,975	297,483	295,004
Len & Ad	10,606	5,937	3,618	2,852	23,013	29,038	27,070	27,732	29,577
Frontenac	11,355	6,849	4,482	2,894	25,580	32,222	34,180	33,051	36,229
Leeds & G	24,017	12,546	6,595	4,046	47,204	62,925	66,677	75,681	76,498
Dundas	6,504	3,053	2,743	1,501	13,801	18,818	20,104	20,691	25,239
Stormont	7,095	3,496	1,942	1,086	13,619	15,071	16,464	15,501	18,506
Glengarry	9,721	4,711	3,565	2,183	20,180	22,333	25,716	25,117	27,970
Prescott	7,474	4,947	2,156	944	15,521	18,113	21,840	21,039	20,046
Russell	5,380	2,621	1,572	970	10,543	15,055	14,094	15,655	15,839
Carleton	20,807	12,506	4,513	3,266	41,092	46,737	44,035	56,018	53,160
Renfrew	29,741	14,393	5,846	3,635	53,615	55,379	57,427	67,827	59,480
Lanark	29,412	17,164	2,688	1,698	50,962	54,160	60,078	63,160	61,473
Totals	162,112	88,223	39,720	25,075	315,130	369,851	387,685	421,472	424,017
Victoria	17,156	9,438	4,847	3,190	34,631	34,358	38,624	40,313	36,596
Peterboro'	12,442	6,727	1,618	1,579	22,366	24,325	31,881	32,378	30,565
Haliburton	2,066	1,036	536	297	3,935	4,122	7,262	5,636	4,830
Hastings	18,530	10,110	5,212	3,021	36,873	42,859	45,851	43,775	47,441
Totals	50,194	27,311	12,213	8,087	97,805	105,664	123,618	122,102	119,432
Muskoka	4,579	3,132	1,376	874	9,961	9,914	10,314	10,500	8,960
Parry Sound	1,171	763	570	462	2,966	3,193	3,952	3,557	2,659
Algoma	2,391	1,569	1,034	364	5,358	6,188	4,838	3,811	4,112
Totals	8,141	5,464	2,980	1,700	18,285	19,295	19,104	17,868	15,731
The Province. 1887	673,935	413,775	183,478	124,973	1,396,161				
The Province. 1886	790,652	476,970	206,371	136,956		1,610,949			
The Province. 1885	908,762	547,952	176,248	122,643			1,755,605		
The Province. 1884	994,608	595,996	176,341	123,788				1,890,733	
The Province. 1883	1,043,080	580,095	150,281	95,328					1,868,784

HOGS.

TABLE No. IV.—Showing by County Municipalities and groups of Counties the number of Hogs (over and under 1 year) in Ontario in 1887; also the totals for the five years 1883-7.

Counties.	Over 1 year.	Under 1 year.	Totals.				
			1887.	1886.	1885.	1884.	1883.
Essex	9,531	33,475	43,006	47,424	44,061	43,069	43,328
Kent	10,177	44,346	54,523	50,712	42,515	40,687	44,485
Elgin	6,401	29,423	35,824	32,832	26,450	26,839	32,752
Norfolk	5,167	21,946	27,113	23,003	22,381	23,851	24,404
Haldimand	2,958	13,112	16,070	18,584	16,858	17,736	16,653
Welland	1,404	7,903	9,307	10,803	10,737	11,269	11,498
Totals	35,638	150,205	185,843	183,358	163,002	163,451	173,120
Lambton	3,706	13,716	17,422	19,259	16,944	20,251	18,548
Huron	6,499	22,132	28,631	27,717	28,675	37,151	34,264
Bruce	5,439	18,208	23,647	22,966	24,090	30,119	29,012
Totals	15,644	54,056	69,700	69,942	69,709	87,521	81,824
Grey	8,525	24,502	33,027	36,447	35,275	44,594	40,279
Simcoe	9,932	28,056	37,988	39,746	42,488	47,117	42,553
Totals	18,457	52,558	71,015	76,193	77,763	91,711	82,832
Middlesex	6,338	32,219	38,557	39,874	35,147	39,395	42,941
Oxford	4,594	25,665	30,259	29,580	25,858	27,121	31,320
Brant	2,262	11,970	14,232	12,877	13,223	15,946	13,930
Perth	4,913	17,640	22,553	23,505	21,133	25,201	25,509
Wellington	6,929	23,965	30,894	30,550	29,947	35,532	32,515
Waterloo	2,941	11,234	14,175	15,536	15,507	18,681	16,232
Dufferin	2,634	9,297	11,931	14,080	14,952	16,879	14,603
Totals	30,611	131,990	162,601	166,002	155,767	178,755	177,050
Lincoln	2,393	8,832	11,225	14,135	13,179	12,850	13,088
Wentworth	2,463	11,950	14,413	16,816	15,908	18,388	19,529
Halton	1,511	8,327	9,838	11,027	11,603	12,711	11,315
Peel	3,973	15,147	19,120	20,801	19,866	20,456	19,007
York	7,005	27,186	34,191	38,567	34,850	38,002	35,856
Ontario	6,464	16,743	23,207	26,303	24,894	26,631	27,034
Durham	4,926	12,526	17,452	16,847	17,596	23,116	18,813
Northumberland	6,880	10,795	17,675	18,019	19,106	20,992	20,377
Prince Edward	2,155	5,402	7,557	7,499	6,931	8,372	7,719
Totals	37,770	116,908	154,678	170,014	163,933	181,518	172,738
Lennox and Addington	2,817	5,351	8,168	8,255	8,715	10,179	9,476
Frontenac	2,603	5,625	8,228	8,734	8,229	9,396	9,868
Leeds and Grenville	8,376	12,385	20,761	22,342	20,686	23,085	25,260
Dundas	2,720	5,757	8,477	10,142	9,600	10,332	11,960
Stormont	2,475	4,203	6,678	8,941	7,217	7,829	8,807
Glengarry	3,189	4,669	7,858	9,112	9,484	9,145	10,136
Prescott	3,942	4,676	8,618	10,165	10,130	8,942	10,578
Russell	2,558	3,265	5,823	6,917	7,363	8,015	7,531
Carleton	5,829	12,861	18,690	22,771	19,843	22,071	20,614
Renfrew	8,417	10,422	18,839	15,707	17,077	16,954	17,448
Lanark	4,587	9,334	13,921	14,177	13,810	14,217	14,777
Totals	47,513	78,548	126,061	137,263	132,154	140,165	146,455
Victoria	7,309	12,252	19,561	16,447	17,235	19,044	19,415
Peterborough	4,350	9,191	13,541	13,613	14,449	17,259	15,148
Haliburton	425	1,232	1,657	1,837	1,504	1,716	1,952
Hastings	7,784	14,256	22,040	18,430	18,230	22,824	25,721
Totals	19,868	36,931	56,799	50,327	51,418	60,843	62,236
Muskoka	688	2,052	2,740	2,419	3,052	4,236	3,415
Parry Sound	322	1,102	1,424	1,837	1,808	3,505	3,180
Algoma	433	1,523	1,956	2,770	3,656	4,453	3,877
Totals	1,443	4,677	6,120	7,026	8,516	12,194	10,472
The Province—1887	206,944	625,873	832,817				
The Province—1886	207,487	652,638		860,125			
The Province—1885	225,512	596,750			822,262		
The Province—1884	257,711	658,447				916,158	
The Province—1883	245,996	660,731					906,727

POULTRY.

TABLE No V.—Showing by County Municipalities and groups of Counties the number of Turkeys Geese and other Fowls in Ontario in 1887 ; also the totals of Poultry for the five years 1883-7.

Counties.	Turkeys	Geese.	Other Fowls.	Totals.				
				1887.	1886.	1885.	1884.	1883.
Essex	14,330	15,347	153,178	182,855	197,515	205,417	161,895	158,295
Kent	14,412	11,744	176,055	202,211	220,571	214,911	168,862	184,731
Elgin	11,977	6,580	158,817	177,374	188,167	157,556	137,544	140,703
Norfolk	11,253	6,974	130,261	148,488	147,204	143,150	137,773	133,465
Haldimand	10,872	8,698	108,982	128,552	135,883	118,227	114,894	94,868
Welland	7,521	5,298	90,342	103,161	118,625	103,616	104,009	88,737
Totals	70,365	54,641	817,635	942,641	1,007,965	942,877	824,977	800,799
Lambton	9,365	8,613	137,014	154,992	176,338	138,032	149,575	123,542
Huron	11,374	22,782	293,515	327,671	337,030	314,705	307,845	289,144
Bruce	7,078	16,244	197,864	221,186	226,689	202,718	213,713	204,013
Totals	27,817	47,639	628,393	703,849	740,057	655,455	671,133	616,699
Grey	15,430	23,519	249,268	288,217	300,057	272,483	269,909	250,741
Simcoe	18,021	25,382	218,269	261,672	279,622	251,944	255,635	225,232
Totals	33,451	48,901	467,537	549,889	579 679	524,427	525,544	475,973
Middlesex	25,692	17,606	276,097	319,395	355,322	322,300	277,276	269,904
Oxford	7,811	7,140	166,069	181,020	199,916	187,528	169,649	176,102
Brant	7,443	3,557	83,758	94,758	97,752	88,487	90,254	82,276
Perth	7,050	16,259	202,323	225,632	237,419	230,743	240,553	213,370
Wellington	11,853	20,209	209,493	241,555	237,418	226,363	229,880	214,898
Waterloo	4,710	4,326	121,842	130,878	139,754	126,247	120,684	114,951
Dufferin	6,761	10,186	81,900	98,847	109,508	102,369	104,562	85,474
Totals	71,320	79,283	1,141,482	1,292,085	1,377,089	1,284,037	1,232,858	1,156,975
Lincoln	6,830	3,893	75,885	86,608	99,790	95,762	82,295	80,449
Wentworth	6,973	5,642	101,985	114,600	123,278	109,908	105,890	108,881
Halton	7,711	6,527	74,680	88,918	98,925	84,716	88,247	78,328
Peel	13,612	13,210	116,899	143,721	147,705	144,392	154,423	123,957
York	16,167	17,099	193,629	226,895	254,970	225,005	213,763	203,281
Ontario	10,320	12,952	160,179	183,451	186,048	173,517	181,040	163,474
Durham	11,554	14,897	127,933	154,384	183,128	149,397	149,598	135,829
Northumberland	7,622	8,920	139,760	156,302	170,013	155,942	162,941	146,323
Prince Edward	4,162	3,671	97,942	105,775	107,840	95,951	95,982	91,550
Totals	84,951	86,811	1,088,892	1,260,654	1,371,697	1,234,590	1,234,179	1,132,072
Lennox & Addington	3,470	3,913	92,379	99,762	96,573	88,994	90,848	84,848
Frontenac	6,294	5,338	71,606	83,238	105,232	86,289	92,698	80,301
Leeds & Grenville	20,995	12,583	166,055	199,633	248,587	224,576	237,399	222,636
Dundas	5.171	5,345	100,353	110,869	122,663	119,231	113,029	113,253
Stormont	2,155	3,626	72,646	78,427	97,777	83,332	78,906	86,023
Glengarry	1,436	4,904	83,756	90,096	94,807	85,150	87,214	82,294
Prescott	2,823	2,487	52,489	57.799	68,174	66,981	62,073	63,989
Russell	4,979	2,996	42,660	50,635	55,892	54,361	52,584	52,869
Carleton	22,620	12,715	119,141	154,476	228,579	182,810	195,894	163,655
Renfrew	11,979	10,067	91,829	113,875	119,136	103,005	105,805	108,638
Lanark	14,956	9,804	119,147	143,907	156,581	153,172	149,764	134,849
Totals	96,878	73,778	1,012,061	1,182,717	1,394,001	1,247,901	1,266,214	1,193,355
Victoria	9,599	12,561	119,259	141,419	129,479	114,436	127,845	112,245
Peterborough	6,446	8,839	112,239	127,524	124,645	119,991	118,209	105,148
Haliburton	741	655	13,305	14,701	13,554	13,199	12,747	12,326
Hastings	5,026	10,971	145,121	161,118	166,112	142,646	154,462	182,777
Totals	21,812	33,026	389,924	444,762	433,790	390,272	413,263	412,496
Muskoka	2,008	1,723	29,730	33,461	32,175	24,344	32,244	23,556
Parry Sound	492	268	9,204	9,964	12,429	11,666	19,370	17,843
Algoma	504	1,985	15,850	18,339	20,033	21,236	17,824	17,576
Totals	3,004	3,976	54,784	61,764	64,637	57,246	69,438	58,975
The Province 1887	409,598	428,055	5,600,708	6,438,361				
The Province 1886	522,714	493,756	5,952,445		6,968,915			
The Province 1885	428,233	476,942	5,431,630			6,336,805		
The Province 1884	445,532	540,130	5,251,944				6,237,606	
The Province 1883	355,635	491,093	5,000,616					5,847,344

RATIOS OF LIVE STOCK.

TABLE No. VI.—Showing by County Municipalities and groups of Counties the number of Live Stock in Ontario in the years 1886 and 1887 per 1,000 acres of cleared land; also the values of Live Stock per 1,000 acres of cleared land in the year 1887, with the annual average of the six years 1882-7.

Counties.	Horses.		Cattle.		Sheep.		Hogs.		Poultry.		Value of Live Stock.	
	1887.	1886.	1887.	1886.	1887.	1886.	1887.	1886.	1887.	1886.	1887.	1882-7.
											$	$
Essex	72.2	78.1	184.7	192.2	121.3	149.7	231.1	257.8	982.6	1073.9	11,370	11,325
Kent	65.3	67.5	198.9	218.6	89.3	118.7	192.9	185.3	715.6	806.1	10,635	10,706
Elgin	54.2	52.9	191.4	193.6	122.6	114.8	137.8	125.4	672.2	718.5	9,925	10,018
Norfolk	53.0	51.9	153.7	159.7	102.4	121.6	119.1	102.9	652.4	658.7	8,297	8,169
Haldimand	53.7	54.5	172.4	179.9	140.0	151.3	81.2	93.9	649.7	686.5	9,283	8,958
Welland	55.7	56.9	143.7	141.1	139.3	154.1	58.5	69.2	647.9	760.2	8,970	8,518
Group	59.0	60.1	176.9	184.4	116.4	132.0	141.5	141.4	717.7	777.2	9,788	9,710
Lambton	52.8	53.5	224.7	229.3	119.2	144.1	68.7	76.4	611.3	699.4	10,635	10,906
Huron	51.3	51.4	200.7	206.5	132.1	152.0	54.4	53.1	623.0	645.6	10,270	10,403
Bruce	45.7	46.3	192.4	201.3	162.9	180.2	55.2	54.4	516.3	536.8	9,305	9,243
Group	49.6	50.0	202.8	209.5	140.3	160.3	57.8	58.5	582.7	618.5	10,004	10,104
Grey	45.8	45.6	189.5	203.2	189.3	214.3	61.6	69.9	537.2	575.3	8,969	8,900
Simcoe	51.1	52.4	150.9	164.7	145.5	176.7	83.7	90.5	576.6	636.7	8,900	9,030
Group	48.2	48.7	171.8	185.6	169.2	197.2	71.7	79.3	555.2	603.4	8,937	8,959
Middlesex	52.1	52.4	208.7	234.3	89.4	104.2	74.9	79.6	620.7	709.1	11,550	11,880
Oxford	51.1	51.5	209.0	220.0	77.9	86.5	90.6	88.5	541.9	598.1	10,526	10,799
Brant	57.8	55.8	157.5	172.1	118.4	137.7	84.5	76.6	562.6	581.7	10,170	9,600
Perth	53.2	50.8	224.8	224.1	128.5	155.3	63.7	67.1	637.1	677.8	10,980	10,956
Wellington	50.2	48.7	182.9	188.2	154.9	177.7	71.5	71.4	558.9	555.2	9,898	9,873
Waterloo	52.3	52.2	157.5	165.2	130.2	153.8	60.8	67.0	561.4	602.5	9,485	9,466
Dufferin	45.7	44.2	168.9	173.5	133.0	167.8	66.6	79.3	551.8	616.6	7,858	8,433
Group	51.7	50.9	193.8	204.5	116.7	137.0	73.4	75.8	583.2	628.6	10,362	10,470
Lincoln	58.9	61.6	147.8	143.7	92.9	126.8	75.6	94.7	583.2	668.6	9,399	9,191
Wentworth	58.3	58.9	158.9	168.1	103.0	123.1	70.0	82.8	556.3	607.3	11,219	10,029
Halton	48.1	52.7	166.3	177.0	104.5	113.6	59.2	66.4	534.8	596.1	9,339	9,449
Peel	51.8	51.4	139.6	146.1	97.4	120.7	81.8	90.1	614.7	639.9	9,585	9,039
York	58.2	59.6	115.9	125.9	89.3	116.6	82.6	95.5	548.3	631.6	9,419	9,704
Ontario	55.9	55.0	154.4	158.6	99.5	136.6	70.0	80.3	553.5	567.6	10,572	10,240
Durham	54.0	56.0	130.7	145.4	104.6	123.6	64.3	62.3	568.8	676.7	8,602	8,658
Northumberland	53.7	54.0	140.0	143.6	100.8	105.5	56.6	58.3	500.8	550.3	8,233	7,859
Prince Edward	59.0	58.1	105.1	119.1	62.9	83.4	41.3	41.4	578.3	595.7	7,742	7,137
Group	55.5	56.3	137.9	145.8	95.5	117.6	68.3	75.9	556.2	612.1	9,365	9,111
Lennox & Add	52.3	50.7	178.0	175.6	115.6	145.1	41.0	41.3	501.3	482.6	8,079	7,291
Frontenac	45.3	48.6	161.1	185.5	126.1	162.2	40.6	44.0	410.3	529.8	7,877	7,239
Leeds and Gren	46.4	45.7	184.0	196.0	115.6	156.3	50.9	55.5	489.1	617.4	8,203	7,825
Dundas	54.4	56.9	205.5	218.0	100.1	140.1	61.5	75.5	804.7	913.0	9,787	9,369
Stormont	54.2	59.5	205.5	223.5	118.8	134.6	58.3	79.8	684.3	873.0	9,872	9,328
Glengarry	62.0	60.8	206.4	226.5	144.0	164.4	56.1	67.1	642.9	698.0	10,029	9,611
Prescott	54.0	52.4	164.0	186.9	120.7	145.4	67.0	81.6	449.3	547.4	8,434	8,297
Russell	59.4	58.6	193.2	214.9	137.5	202.8	75.9	93.2	660.3	752.8	9,516	9,602
Carleton	47.7	51.1	175.0	187.2	151.2	179.3	68.8	87.3	568.5	876.8	9,060	8,873
Renfrew	42.9	43.5	168.4	179.4	218.9	230.8	76.9	65.5	464.9	496.6	8,064	7,451
Lanark	35.2	35.0	163.6	161.2	179 2	193·4	49.0	50.6	506.1	559.2	7,037	6,515
Group	47.9	48.7	178.9	190.6	142.7	171.0	57.7	63.5	535.4	644.5	8,462	8,009
Victoria	52.1	50.7	168.1	160.9	147.9	147.8	83.6	70.8	604.1	557.0	8,912	8,488
Peterborough	48.3	45.5	160.3	159.4	104.4	115.0	63.2	64.3	595.4	589.2	8,069	7,657
Haliburton	36.1	32.0	233.6	249.7	140.5	163.4	59.2	72.8	524.9	537.2	8,353	8,075
Hastings	51.1	49.9	183.4	190.9	115.1	135.1	68.8	58.1	502.9	523.5	8,461	8,055
Group	50.1	48.4	174.4	175.4	122.8	134.3	71.3	64.0	558.3	551.5	8,484	8,077
Muskoka	42.0	39.3	269.1	254.5	195.4	196.3	53.8	47.9	656.5	637.0	10,152	10,054
Parry Sound	31.7	39.1	193.6	238.6	122.7	149.0	58.9	85.7	412.3	579.9	8,587	9,438
Algoma	33.0	39.2	187.1	233.2	157.2	199.0	57.4	89.1	537.9	644.4	7,606	10,415
Group	36.9	39.2	226.7	244.7	167.4	187 3	56.0	68.2	565.5	627.4	9,011	10,003
The Prov. 1887	51.8	.....	175.4	.....	125.7	.....	75.0	.....	579.6	.....	9,399	.....
The Prov. 1886	.....	52.1	.....	184.5	.....	147.3	.....	78.6	.....	637.1	9,801	.....
The Prov. 1882-7	.....	51.3	.....	175.3	.....	162.2	.....	80.6	.....	577.8	.....	9,263

WOOL.

TABLE No. VII.—Showing by County Municipalities and groups of Counties the clip of Coarse Wool in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average number of pounds per fleece.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Fleeces.	Pounds.	Lb. per fleece.	Fleeces.	Pounds.	Lb. per fleece.	Fleeces.	Pounds.	Lb. per fleece.
Essex	10,563	62,748	5.94	13,463	78,566	5.84	12,418	69,653	5.61
Kent	10,293	61,685	5.99	15,532	89,788	5.78	17,996	102,939	5.72
Elgin	14,821	85,834	5.79	14,215	77,296	5.44	20,576	115,662	5.62
Norfolk	9,548	52,882	5.54	11,582	63,356	5.47	14,302	76,832	5.37
Haldimand	12,539	78,563	6.27	14,087	91,462	6.49	16,425	100,393	6.11
Welland	8,655	46,381	5.36	8,924	47,013	5.27	10,592	56,040	5.29
Totals	66,419	388,093	5.84	77,803	447,481	5.75	92,309	521,519	5.65
Lambton	14,546	90,179	6.20	17,808	107,267	6.02	23,682	138,105	5.83
Huron	32,815	189,995	5.79	40,314	225,331	5.59	46,211	262,219	5.67
Bruce	34,898	201,972	5.79	41,611	235,775	5.67	42,788	242,121	5.66
Totals	82,259	482,146	5.86	99,733	568,373	5.70	112,681	642,445	5.70
Grey	50,593	288,992	5.71	60,454	330,631	5.47	63,315	347,716	5.49
Simcoe	29,633	169,833	5.73	38,570	220,216	5.71	39,511	218,863	5.54
Totals	80,226	458,825	5.72	99,024	550,847	5.56	102,826	566,579	5.51
Middlesex	21,079	132,234	6.27	27,119	167,361	6.17	36,422	215,642	5.92
Oxford	10,555	63,136	5.91	11,483	66,986	5.83	18,683	108,254	5.79
Brant	8,454	48,298	5.71	10,048	58,085	5.78	13,079	75,596	5.78
Perth	21,657	127,097	5.87	27,730	156,157	5.63	30,908	173,801	5.62
Wellington	31,686	186,066	5.87	38,045	222,131	5.84	43,324	248,813	5.74
Waterloo	11,833	64,686	5.47	15,675	84,180	5.37	19,045	104,849	5.51
Dufferin	11,932	69,807	5.85	15,856	86,063	5.43	16,652	93,207	5.60
Totals	117,196	691,324	5.80	145,956	840,963	5.76	178,113	1,020,162	5.73
Lincoln	4,814	25,700	5.34	7,914	41,914	5.30	8,237	43,123	5.24
Wentworth	9,182	56,090	6.11	12,364	71,174	5.76	13,590	77,624	5.71
Halton	8,155	51,839	6.36	9,962	62,434	6.27	11,149	70,342	6.31
Peel	10,793	76,944	7.13	13,936	91,842	6.59	14,890	99,434	6.68
York	14,851	94,287	6.35	19,720	126,051	6.39	23,699	145,603	6.14
Ontario	13,902	89,503	6.44	19,394	123,909	6.39	22,256	140,222	6.30
Durham	15,794	89,155	5.64	18,940	111,049	5.86	20,248	117,249	5 79
Northumberland	16,764	98,908	5.90	17,636	99,344	5.63	19,878	113,116	5.69
Prince Edward	5,284	27,532	5.21	6,180	33,129	5.36	7,795	41,917	5.38
Totals	99,539	609,958	6.13	126,046	760,846	6.04	141,742	848,630	5.99
Lennox and Addington	10,350	55,729	5.40	14,496	76,761	5.30	13,776	71,596	5.20
Frontenac	11,171	59,539	5.33	15,937	78,321	4.91	17,236	84,481	4.90
Leeds and Grenville	23,063	111,959	4.85	32,186	154,438	4.80	33,421	160,938	4.82
Dundas	6,389	33,176	5.19	9,114	45,929	5.04	9,977	49,473	4.96
Stormont	7,186	40,617	5.65	7,721	39,176	5.07	8,363	42,398	5.07
Glengarry	8,861	41,620	4.70	12,731	61,168	4.80	13,499	61,847	4.58
Prescott	6,170	30,314	4.91	9,672	46,658	4.82	9,073	42,699	4.71
Russell	4,811	23,707	4.93	8,370	39,384	4.71	7,118	33,379	4.69
Carleton	19,968	106,547	5.34	25,853	130,909	5.06	26,254	131.076	4.99
Renfrew	28,333	128,757	4.54	30,590	138,862	4.54	31,727	139,820	4.41
Lanark	28,373	137,141	4.83	30,168	146,954	4.87	32,898	156,708	4.76
Totals	154,675	769,106	4.97	196,838	958,560	4.87	203,342	974,415	4.79
Victoria	16,593	99,024	5.97	18,398	103,210	5.61	19,790	109,461	5.53
Peterborough	11,838	63,799	5.39	15,041	80,441	5.35	16,432	87,177	5.31
Haliburton	2,218	10,940	4.93	1,975	9,737	4.93	2,408	11,697	4.86
Hastings	17,525	86,226	4.92	22,758	110,800	4.87	22,299	108,931	4.89
Totals	48,174	259,989	5.40	58,172	304,188	5.23	60,929	317,266	5.21
Muskoka	4,542	25,171	5.54	4,686	24,996	5.33	4,521	24,499	5.42
Parry Sound	1,149	6,706	5.84	1,382	8,162	5.91	1,324	7,855	5.93
Algoma	2,309	14,336	6.21	2,810	16,507	5.87	2,159	12,953	6.00
Totals	8,000	46,213	5.78	8,878	49,665	5.59	8,004	45,307	5.66
The Province	656,488	3,705,654	5.64	812,450	4,480,923	5.52	899,946	4,936,323	5.49

WOOL.

TABLE No. VIII.—Showing by County Municipalities and groups of Counties the clip of Fine Wool in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average number of pounds per fleece.

Counties.	1887.			1886.			Yearly average for the six years 1882-7.		
	Fleeces.	Pounds.	Lb. per fleece.	Fleeces.	Pounds.	Lb. per fleece.	Fleeces.	Pounds.	Lb. per fleece.
Essex	3,215	16,236	5.05	3,426	17,180	5.01	2,438	12,383	5.08
Kent	3,878	21,622	5.58	4,439	23,363	5.26	3,910	20,285	5.19
Elgin	3,421	19,897	5.82	3,829	19,400	5.07	3,548	18,975	5.35
Norfolk	3,963	19,540	4.93	5,134	24,064	4.69	4,298	20,569	4.79
Haldimand	3,694	18,268	4.95	3,714	18,401	4.95	3,705	18,181	4.91
Welland	5,330	25,566	4.80	6,068	27,718	4.57	4,679	21,394	4.57
Totals	23,501	121,129	5.15	26,610	130,126	4.89	22,578	111,787	4.95
Lambton	3,285	18,331	5.58	3,830	20,528	5.36	3,590	19,164	5.34
Huron	7,290	40,302	5.53	7,740	39,381	5.09	6,272	33,433	5.33
Bruce	6,513	34,850	5.35	6,602	34,632	5.25	6,615	35,652	5.39
Totals	17,088	93,483	5.47	18,172	94,541	5.20	16,477	88,249	5.36
Grey	9,483	49,732	5.24	10,697	54,292	5.08	9,172	47,641	5.19
Simcoe	10,368	52,138	5.03	11,030	53,725	4.87	8,120	41,432	5.10
Totals	19,851	101,870	5.13	21,727	108,017	4.97	17,292	89,073	5.15
Middlesex	4,655	26,544	5.70	5,608	31,277	5.58	5,080	28,364	5.58
Oxford	4,622	23,603	5.11	5,971	32,642	5.47	4,190	22,143	5.28
Brant	2,612	12,279	4.70	3,894	19,562	5.02	3,120	16,411	5.26
Perth	4,617	24,851	5.38	4,568	24,628	5.39	4,378	23,610	5.39
Wellington	7,830	39,052	4.99	9,549	49,497	5.18	7,713	39,655	5.14
Waterloo	7,010	36,224	5.17	6,929	36,321	5.24	5,238	26,117	4.99
Dufferin	3,142	16,981	5.40	2,863	16,003	5.59	2,465	13,462	4.46
Totals	34,488	179,534	5.21	39,382	209,930	5.33	32,184	169,762	5.27
Lincoln	3,528	17,896	5.07	3,328	17,118	5.14	3,046	15,092	4.95
Wentworth	2,643	13,755	5.20	3,327	16,872	5.07	2,894	14,579	5.04
Halton	1,965	11,322	5.76	1,815	9,627	5.30	1,768	9,719	5.50
Peel	3,076	17,360	5.64	3,521	19,714	5.60	2,128	11,728	5.51
York	8,177	43,463	5.32	10,740	55,644	5.18	6,902	37,020	5.36
Ontario	6,879	40,140	5.84	9,768	53,253	5.45	6,821	38,166	5.60
Durham	2,722	15,511	5.70	2,902	15,088	5.20	2,514	14,257	5.67
Northumberland	3,080	16,661	5.41	3,553	19,278	5.43	2,802	15,048	5.37
Prince Edward	1,845	9,666	5·24	4,087	21,015	5.14	2,875	14,508	5.05
Totals	33,915	185,774	5.48	43,041	227,609	5.29	31,750	170,117	5.36
Lennox and Addington	3,626	18,642	5.14	4,857	23,243	4.79	3,656	18,373	5.03
Frontenac	4,488	21,582	4.81	4,605	23,619	5.13	3,970	19,707	4.96
Leeds and Grenville	6,943	33,356	4.80	8,030	39,548	4.93	8,743	43,000	4.92
Dundas	2,578	13,141	5.10	2,641	12,836	4.86	2,741	13,274	4.84
Stormont	2,034	10,902	5.36	2,568	12,457	4.85	2,553	12,993	5.09
Glengarry	3,692	17,879	4.84	3,718	16,953	4.56	3,978	18,828	4.73
Prescott	2,023	11,093	5.48	2,100	9,754	4.64	2,589	12,805	4.95
Russell	1,633	7,592	4.65	1,577	7,618	4.83	1,726	8,446	4.89
Carleton	4,252	21,814	5.13	6,144	29,091	4.73	5,296	26,148	4.94
Renfrew	5,217	26,051	4.99	7,103	30,682	4.32	6,120	27,364	4.47
Lanark	2,885	15,009	5.20	4,887	22,321	4.57	3,555	16,673	4.69
Totals	39,371	197,061	5.01	48,230	228,122	4.73	44,927	217,611	4.84
Victoria	4,480	24,445	5.46	3,560	17,302	4.86	3,696	20,281	5.49
Peterborough	1,490	6,733	4.52	1,709	7,299	4.27	2,060	9,847	4.78
Haliburton	516	2,630	5.10	680	3,063	4.50	1,111	4,708	4.24
Hastings	4,998	25,485	5.10	5,365	24,631	4.59	6,279	29,292	4.67
Totals	11,484	59,293	5.16	11,314	52,295	4.62	13,146	64,128	4.88
Muskoka	1,378	6,786	4.92	1,575	8,098	5.14	1,325	6,757	5.10
Parry Sound	554	3,026	5.46	836	3,709	4.44	597	3,125	5.23
Algoma	872	4,639	5.32	814	4,497	5.52	574	2,985	5.20
Totals	2,804	14,451	5.15	3,225	16,304	5.06	2,496	12,867	5.16
The Province	182,502	952,595	5.22	211,701	1,066,944	5.04	180,850	923,594	5.11

WOOL.

TABLE No. IX.—Showing by County Municipalities and groups of Counties the total Clip of Wool in Ontario in the six years 1882-7, with the yearly average for the six years.

Counties.	1887.	1886.	1885.	1884.	1883.	1882.	Yearly average for the six years 1882-7.	
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Fleeces.	Pounds.
Essex	78,984	95,746	85,558	87,551	79,258	65,120	14,856	82,036
Kent	83,307	113,151	134,948	127,534	149,459	130,945	21,906	123,224
Elgin	105,731	96,696	115,548	163,734	162,154	163,959	24,124	134,637
Norfolk	72,422	87,420	94,031	109,006	117,999	103,529	18,600	97,401
Haldimand	96,831	109,863	117,758	145,337	128,978	112,675	20,130	118,574
Welland	71,947	74,731	87,606	84,198	78,385	67,735	15,271	77,434
Totals	509,222	577,607	635,449	717,360	716,233	643,963	114,887	633,306
Lambton	108,510	127,795	147,756	201,224	183,975	174,356	27,272	157,269
Huron	230,297	264,712	301,663	334,812	346,859	295,571	52,483	295,652
Bruce	236,822	270,407	294,646	305,715	309,938	249,109	49,403	277,773
Totals	575,629	662,914	744,065	841,751	840,772	719,036	129,158	730,694
Grey	338,724	384,923	436,381	445,835	413,773	352,510	72,487	395,357
Simcoe	221,971	273,941	313,686	292,498	269,319	190,354	47,631	260,295
Totals	560,695	658,864	750,067	738,333	683,092	542,864	120,118	655,652
Middlesex	158,778	198,638	223,630	267,475	313,559	301,953	41,502	244,006
Oxford	86,739	99,628	118,750	142,939	166,579	167,748	22,873	130,397
Brant	60,577	77,647	95,119	98,163	110,429	110,105	16,199	92,007
Perth	151,948	180,785	192,723	215,322	232,718	210,972	35,286	197,411
Wellington	225,118	271,628	308,846	339,207	328,514	257,494	51,037	288,468
Waterloo	100,910	120,501	138,478	144,760	141,082	140,064	24,283	130,966
Dufferin	86,788	102,066	120,581	122,155	112,282	96,146	19,117	106,669
Totals	870,858	1,050,893	1,198,127	1,330,021	1,405,163	1,284,482	210,297	1,189,924
Lincoln	43,596	59,032	58,398	61,256	65,715	61,294	11,283	58,215
Wentworth	69,845	84,046	89,092	101,877	109,327	95,030	16,484	92,203
Halton	63,161	72,061	82,384	91,559	87,700	83,501	12,917	80,061
Peel	94,304	111,556	108,831	120,066	115,490	116,724	17,018	111,162
York	137,750	181,695	199,834	182,368	203,530	190,562	30,601	182,623
Ontario	129,643	177,162	181,491	205,297	203,983	172,750	29,077	178,388
Durham	104,666	126,137	132,495	161,761	136,700	127,279	22,762	131,506
Northumberland	115,569	118,622	138,888	140,612	134,165	121,130	22,680	128,164
Prince Edward	37,198	54,144	53,113	57,840	64,484	71,773	10,670	56,425
Totals	795,732	988,455	1,044,526	1,122,636	1,121,094	1,040,043	173,492	1,018,747
Lennox and Ad.	74,371	100,004	87,790	92,985	96,828	87,837	17,432	89,969
Frontenac	81,121	101,940	108,356	99,604	119,563	114,544	21,206	104,188
Leeds and Gren.	145,315	193,986	211,051	226,558	240,986	205,730	42,164	203,938
Dundas	46,317	58,765	63,739	62,502	82,666	62,493	12,718	62,747
Stormont	51,519	51,633	55,362	53,767	64,945	55,116	10,916	55,391
Glengarry	59,499	78,121	84,447	79,512	92,810	89,660	17,477	80,675
Prescott	41,407	56,412	69,173	54,863	58,719	52,450	11,662	55,504
Russell	31,299	47,002	44,335	42,091	52,424	33,796	8,844	41,825
Carleton	128,361	160,000	143,288	179,495	174,527	157,677	31,550	157,224
Renfrew	154,808	169,544	168,906	191,129	184,777	133,942	37,847	167,184
Lanark	152,150	169,275	188,319	190,580	196,318	143,644	36,453	173,381
Totals	966,167	1,186,682	1,224,766	1,273,086	1,364,563	1,136,889	248,269	1,192,026
Victoria	123,469	120,512	135,490	145,383	142,735	110,861	23,486	129,742
Peterborough	70,532	87,740	111,826	112,680	108,474	90,888	18,492	97,024
Haliburton	13,570	12,800	23,312	18,704	15,799	14,248	3,519	16,405
Hastings	111,711	135,431	147,986	146,873	154,242	133,094	28,578	138,223
Totals	319,282	356,483	418,614	423,640	421,250	349,091	74,075	381,394
Muskoka	31,957	33,094	37,179	35,747	31,206	18,354	5,846	31,256
Parry Sound	9,732	11,871	14,883	13,850	10,320	5,224	1,921	10,980
Algoma	18,975	21,004	19,190	15,494	14,725	6,239	2,733	15,938
Totals	60,664	65,969	71,252	65,091	56,251	29,817	10,500	58,174
The Province	4,658,249	5,547,867	6,086,866	6,511,918	6,608,418	5,746,185	1,080,796	5,859,917

FACTORY CHEESE.

TABLE X.—Showing by County Municipalities and groups of Counties the quantity and value of cheese made at 628 factories in Ontario in 1887, the average dates of opening and closing, and the total number of factories reported in operation.

Counties.	Factories. No. in operation. 1886	1887	No. making Return.	Quantity of— Milk used.	Cheese made.	Value of cheese made.	Milk required to make 1 lb. of cheese.	Value of cheese per 100 lb.	Average date of— Opening	Closing.
				lb.	lb.	$ c.	lb.	$ c.		
Essex	1	1	1	1,130,297	112,013	12,704 02	10.09	11.34	May 1	Nov. 11
Kent	12	13	13	9,397,655	881,923	91,771 75	10.66	10.41	" 16	" 1
Elgin	23	21	19	22,675,470	2,073,898	217,459 71	10.93	10.49	April 28	" 11
Norfolk	22	22	19	16,812,411	1,565,147	160,964 57	10.74	10.28	May 2	Oct. 29
Haldimand	11	12	10	10,492,031	968,952	97,706 57	10.83	10.08	" 5	" 27
Welland	8	6	3	719,539	65,938	6,636 98	10.91	10.07	" 11	" 23
Totals	77	75	65	61,227,403	5,667,871	587,243 60	10.80	10.36	May 4	Nov. 2
Lambton	20	20	18	17,556,506	1,634,217	166,216 01	10.74	10.17	May 14	Oct. 28
Huron	17	15	13	16,877,297	1,568,281	165,821 42	10.76	10.57	" 13	" 25
Bruce	17	19	17	18,134,778	1,686,080	173,223 76	10.76	10.27	" 18	" 19
Totals	54	54	48	52,568,581	4,888,578	505,261 19	10.75	10.34	May 15	Oct. 24
Grey	8	9	8	5,576,181	523,110	53,358 56	10.66	10.20	May 16	Oct. 15
Simcoe	5	5	4	1,613,688	152,612	15,818 74	10.57	10.37	" 25	Sep. 25
Totals	13	14	12	7,189,869	675,722	69,177 30	10.64	10.24	May 19	Oct. 9
Middlesex	40	39	37	51,616,887	4,803,998	501,824 13	10.74	10.45	May 1	Nov. 8
Oxford	43	43	37	65,076,459	6,093,970	638,640 86	10.68	10.48	April 20	" 12
Brant	6	4	3	2,586,054	247,186	25,945 35	10.46	10.50	" 18	" 5
Perth	25	23	23	32,036,991	2,999,100	321,757 67	10.68	10.70	May 2	" 2
Wellington	11	11	11	14,280,570	1,340,981	137,930 83	10.65	10.29	" 15	Oct. 22
Waterloo	8	7	7	5,526,013	500,820	51,689 99	11.03	10.32	" 16	" 22
Dufferin	3	4	3	1,405,560	129,353	14,153 28	10.87	10.94	" 24	" 10
Totals	136	131	121	172,528,534	16,115,408	1,691,942 11	10.70	10.50	April 30	Nov. 5
Lincoln	5	5	5	3,325,675	306,037	30,480 99	10.87	9.96	May 4	Oct. 20
Wentworth	3	3	3	3,191,296	298,040	30.865 40	10.71	10.36	" 6	Nov. 2
Halton	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peel	1	1	1	509,850	47,500	4,850 00	10.73	10.21	May 12	Oct. 1
York	3	3	2	246,417	23,377	2,634 55	10.54	11.27	June 3	Sep. 20
Ontario	4	5	4	936,981	87,990	9,313 23	10.65	10.58	May 16	" 21
Durham	6	6	6	3,349,473	305,204	30,819 84	10.97	10.10	" 11	Oct. 13
Northumberland	39	32	26	21,196,190	2,019,864	216,305 89	10.49	10.71	" 1	Nov. 1
Prince Edward	19	17	14	10,917,871	1,045,745	108,523 63	10.44	10.38	" 2	Oct. 6
Totals	81	72	61	43,673,753	4,133,757	433,793 53	10.57	10.50	May 5	Oct. 19
Lennox and Add	18	19	18	20,600,259	1,955,797	201,700 15	10.54	10.32	April 30	Oct. 24
Frontenac	37	33	27	16,128,169	1,548,356	159,851 27	10.42	10.32	May 4	" 20
Leeds and Gren.	113	103	85	77,379,342	7,495,603	802,182 58	10.32	10.70	April 26	" 29
Dundas	119	26	19	15,026,694	1,457,725	155,375 43	10.31	10.66	May 1	" 30
Stormont		28	22	16,084,676	1,557,228	163,707 72	10.33	10.51	" 5	" 19
Glengarry		30	30	16,157,197	1,561,306	171,574 22	10.35	10.99	" 15	" 20
Prescott		24	11	5,981,916	594,758	61,452 71	10.06	10.33	" 5	" 27
Russell	6	6	6	2,888,265	282,064	30,295 38	10.24	10.74	" 12	" 25
Carleton	10	11	11	7,896,916	763,802	82,393 33	10.34	10.79	" 14	" 21
Renfrew	3	4	4	1,756,787	173,100	18,822 16	10.15	10.87	" 25	" 11
Lanark	22	23	19	14,270,829	1,391,860	148,468 78	10.25	10.67	" 8	" 19
Totals	328	307	252	194,171,050	18,781,599	1,995,823 73	10.34	10.63	May 2	Oct. 28
Victoria	10	8	7	3,380,403	320.955	35,053 51	10.53	10.92	May 14	Oct. 21
Peterborough	20	21	20	13,324,034	1,257,555	137,344 08	10.59	10.91	" 4	" 28
Hastings	51	54	41	41,356,105	4,082,008	439,192 49	10.13	10.76	April 27	" 30
Totals	81	83	68	58,060,542	5,660,518	611,590 08	10.26	10.80	May 1	Oct. 28
Muskoka	....	1	1	79,882	7,451	795 56	10.72	10.68	June 6	Aug. 13
The Prov. (1887	...	737	628	589,499,614	55,930,904	5,895,627 10	10.54	10.54	May 4	Oct. 27
1886	770	.....	626	532,265,234	51,804,850	4,791,597 64	10.27	9.25	" 7	" 29
1885	752	.....	536	522,769,107	50,755,871	4,120,834 46	10.30	8.12	" 4	" 29
1884	751	.....	567	517,899,803	50,838,932	5,284,124 48	10.25	10.46	" 3	" 30
1883)	635	.....	440	373,962,719	37,079,896	3,872,927 52	10.09	10.44	" 3	" 30

FACTORY CHEESE.

TABLE No. XI.—Showing by County Municipalities and groups of Counties the average of days in operation, of number of patrons, of average number of cows, and of value of product per cow for 459 factories in Ontario making complete returns in 1887.

Counties.	No. of returns.	Average No. of days worked.	Quantity of— Milk used.	Quantity of— Cheese made.	Value of cheese.	No. of patrons.	Average No. of cows.	Value of product per cow— Per season	Value of product per cow— Per day.
			lb.	lb.	$ c.			$ c.	cts.
Essex	1	168	1,130,297	112,013	12,704 02	125	380	33 43	19.9
Kent	7	149	5,639,720	525,020	54,896 84	470	2,200	24 95	16.7
Elgin	12	176	14,826,070	1,376,566	144,969 02	872	4,876	29 73	16.9
Norfolk	11	148	8,887,737	838,446	85,125 40	815	3,609	23 59	15.9
Haldimand	7	152	7,095,106	660,304	66,767 21	713	2,785	23 97	15.8
Welland	3	146	719,539	65,938	6,636 98	90	270	24 58	16.8
Totals	41	159	38,298,469	3,578,287	371,099 47	3,085	14,120	26 28	16.5
Lambton	11	150	10,477,259	973,109	98,877 07	825	3,796	26 05	17.4
Huron	10	144	12,983,460	1,210,418	128,382 52	1,068	4,706	27 28	18.9
Bruce	11	137	13,529,775	1,260,177	130,662 90	1,017	5,285	24 72	18.0
Totals	32	143	36,990,494	3,443,704	357,922 49	2,910	13,787	25 96	18.2
Grey	7	131	4,861,096	456,103	46,390 95	400	1,969	23 56	18.0
Simcoe	3	109	1,151,709	109,570	11,408 19	125	575	19 84	18.2
Totals	10	126	6,012,805	565,673	57,799 18	525	2,544	22 72	18.0
Middlesex	29	169	42,806,271	3,976,860	416,158 57	2,637	14,277	29 15	17.2
Oxford	27	180	51,319,832	4,813,465	504,699 85	1,998	15,882	31 78	17.7
Brant	3	171	2,586,054	247,186	25,945 35	156	862	30 10	17.6
Perth	15	154	22,275,364	2,088,692	222,595 46	1,464	8,539	26 07	16.9
Wellington	9	133	11,821,903	1,110,174	113,346 79	916	4,550	24 91	18.7
Waterloo	6	133	4,848,421	440,369	45,589 99	418	2,046	22 28	16.8
Dufferin	3	121	1,405,560	129,353	14,153 28	120	603	23 47	19.4
Totals	92	164	137,063,405	12,806,099	1,342,489 29	7,709	46,759	28 71	17.5
Lincoln	4	140	2,712,020	248,920	25,020 77	271	1,110	22 54	16.1
Wentworth	2	151	2,016,132	186,040	19,299 40	148	720	26 80	17.7
Halton									
Peel	1	116	509,850	47,500	4,850 00	46	200	24 25	20.9
York	2	88	246,417	23,377	2,634 55	39	162	16 26	18.5
Ontario	3	101	821,531	77,271	8,134 23	141	425	19 14	19.0
Durham	4	133	2,107,338	194,507	19,681 13	228	800	24 60	18.5
Northumberland	19	156	15,761,715	1,501,227	161,566 34	1,028	5,545	29 14	18.7
Prince Edward	10	142	8,723,132	838,283	86,714 88	894	3,643	23 80	16.8
Totals	45	145	32,898,135	3,117,125	327,901 30	2,789	12,605	26 01	17.9
Lennox and Addington	12	159	15,581,528	1,483,229	153,043 82	1,191	5,948	25 73	16.2
Frontenac	23	148	13,599,275	1,301,372	134,828 17	802	5,644	23 89	16.1
Leeds and Grenville	79	160	72,695,525	7,041,005	753,434 37	3,211	26,990	27 92	17.5
Dundas	18	157	13,619,362	1,319,470	140,491 93	675	5,470	25 68	16.4
Stormont	15	144	12,235,425	1,174,110	122,724 02	708	5,088	24 12	16.8
Glengarry	5	146	2,233,942	217,832	23,752 54	149	992	23 94	16.4
Prescott	8	149	4,066,715	408,052	42,102 77	223	1,704	24 71	16.6
Russell	3	142	1,780,152	174,454	19,012 06	150	825	23 04	16.2
Carleton	8	132	5,560,916	538,061	57,963 14	394	2,450	23 66	17.9
Renfrew	3	122	1,313,787	128,900	14,181 16	108	577	24 58	20.1
Lanark	14	143	10,592,411	1,034,654	109,890 93	665	4,431	24 80	17.3
Totals	188	154	153,279,038	14,821,139	1,571,424 91	8,276	60,119	26 14	17.0
Victoria	4	141	1,782,167	168,658	18,217 51	136	682	26 71	18.9
Peterborough	11	151	7,494,331	706,503	77,115 53	436	2,519	30 61	20.3
Hastings	36	161	36,694,438	3,626,261	391,218 07	1,813	12,575	31 11	19.3
Totals	51	158	45,970,936	4,501,422	486,551 11	2,385	15,776	30 84	19.5
The Province 1887	459	156	450,513,282	42,833,449	4,515,187 75	27,679	165,710	27 25	17.5
The Province 1886	455	156	404,036,443	39,361,482	3,646,563 51	23,244	146,325	24 92	16.0

FACTORY CHEESE.

TABLE No. XII.—Showing by County Municipalities and groups of Counties the yearly average per factory of days in operation, of the quantity and value of cheese made, of number of patrons, of average number of cows, and yield of milk and value of product per cow, computed from an aggregate of 2,177 factories making complete returns in the five years 1883-7.

Counties.	No. of days worked per season.	Quantity of—		Value of cheese.	No. of patrons.	Average No. of cows.	Average per cow.				Milk required to make 1 lb. of cheese.	Value of cheese per 100 lb.
		Milk used.	Cheese made.				Yield of milk—		Value of product—			
							Per season.	Per day.	Per season.	Per day.		
		lb.	lb.	$			lb.	lb.	$ c.	cts.	lb.	$ c.
Essex	136	453,369	44,499	4,781	49	189	2,399	17.6	25 30	18.6	10.19	10 74
Kent	148	759,032	72,035	7,087	73	285	2,663	18.0	24 87	16.8	10.54	9 84
Elgin	167	1,068,160	101,483	10,104	69	358	2,984	17.9	28 22	16.9	10.53	9 96
Norfolk	161	953,937	91,954	8,803	74	343	2,781	17.3	25 66	15.9	10.37	9 57
Haldimand	153	904,063	87,045	8,266	78	342	2,643	17.3	24 17	15.8	10.39	9 50
Welland	134	221,755	21,012	1,971	26	105	2,112	15.8	18 77	14.0	10.55	9 38
Group	159	869,767	83,188	8,111	68	312	2,788	17.5	26 00	16.4	10.46	9 75
Lambton	149	864,910	81,772	8,018	70	320	2,703	18.1	25 06	16.8	10.58	9 81
Huron	143	1,253,987	119,428	12,044	101	455	2,756	19.3	26 47	18.5	10.50	10 08
Bruce	138	987,370	94,561	9,284	79	378	2,612	18.9	24 56	17.8	10.44	9 82
Group	143	1,021,433	97,225	9,637	82	379	2,695	18.8	25 43	17.8	10.51	9 91
Grey	133	608,980	59,022	5,658	55	237	2,570	19.3	23 87	17.9	10.32	9 59
Simcoe	127	397,229	38,723	3,893	43	183	2,171	17.1	21 27	16.7	10.26	10 05
Group	131	521,518	50,637	4,929	50	215	2,426	18.5	22 93	17.5	10.30	9 73
Middlesex	169	1,276,623	120,775	12,094	72	416	3,069	18.2	29 07	17.2	10.57	10 01
Oxford	178	1,755,295	167,823	16,903	70	557	3,151	17.7	30 35	17.1	10 46	10 07
Brant	167	959,432	93,839	9,379	64	344	2,789	16.7	27 26	16.3	10.22	9 99
Perth	155	1,254,811	119,416	12,032	75	445	2,820	18.2	27 04	17.4	10.51	10 08
Wellington	144	1,331,504	126,646	12,432	91	478	2,786	19.3	26 01	18.1	10.51	9 82
Waterloo	139	850,118	79,809	8,024	65	321	2,648	19.1	25 00	18.0	10.65	10 05
Dufferin	127	617,207	58,443	5,657	53	355	2,420	19.1	22 18	17.5	10.56	9 68
Group	166	1,368,106	130,274	13,064	72	457	2,994	18.0	28 59	17.2	10.50	10 03
Lincoln	148	663,470	62,830	5,833	66	240	2,764	18.7	24 30	16.4	10.56	9 28
Wentworth	159	1,106,342	106,373	10,396	79	405	2,732	17.2	25 67	16.1	10.40	9 77
Halton	123	102,686	9,868	912	8	45	2,282	18.6	20 27	16.5	10.41	9 24
Peel	124	694,936	65,243	6,175	50	266	2,613	21.1	23 21	18.7	10.65	9 45
York	100	195,832	18,522	1,876	22	102	1,920	19.2	18 39	18.4	10.57	10 13
Ontario	120	277,506	26,325	2,583	35	120	2,313	19.3	21 53	17.9	10.54	9 81
Durham	143	741,061	70,526	6,571	73	277	2,675	18.7	23 72	16.6	10.51	9 32
Northumberland	158	822,475	80,755	7,657	51	282	2,917	18.5	27 15	17.2	10.18	9 48
Prince Edward	149	864,938	85,534	7,891	76	331	2,613	17.5	23 84	16.0	10.11	9 23
Group	151	753,212	73,434	6,927	57	274	2,749	18.2	25 28	16.7	10.26	9 43
Lennox and Add	154	1,270,741	124,586	11,741	95	491	2,588	16.8	23 91	15.5	10.20	9 42
Frontenac	148	575,479	56,250	5,272	32	226	2,546	17.2	23 33	15.8	10.23	9 37
Leeds and Grenville	162	963,205	95,619	9,244	40	349	2,789	17.2	26 49	16.4	10.07	9 67
Dundas	156	808,093	80,079	7,687	37	323	2,502	16.0	23 80	15.3	10.09	9 60
Stormont	149	813,260	79,991	7,445	44	332	2,450	16.4	22 42	15.0	10.17	9 31
Glengarry	155	592,764	57,935	5,932	34	258	2,298	14.8	22 99	14.8	10.23	10 24
Prescott	146	504,012	50,725	4,713	28	228	2,211	15.1	20 67	14.2	9.94	9 29
Russell	141	451,862	45,030	4,460	32	202	2,237	15.9	22 08	15.7	10.03	9 90
Carleton	136	640,316	63,206	6,032	40	285	2,247	16.5	21 16	15.6	10.13	9 54
Renfrew	127	435,097	43,212	4,196	36	215	2,024	15.9	19 52	15.4	10.07	9 71
Lanark	147	874,891	87,171	8,143	51	350	2,500	17.0	23 27	15.8	10.01	9 34
Group	155	806,264	79,721	7,656	42	315	2,560	16.5	24 30	15.7	10.11	9 60
Victoria	141	476,653	46,975	4,470	38	188	2,535	18.0	23 78	16.9	10.15	9 52
Peterborough	148	637,628	61,607	5,871	40	233	2,737	18.5	25 20	17.0	10.35	9 53
Hastings	163	1,004,198	101,336	9,654	48	349	2,877	17.7	27 66	17.0	9.91	9 53
Group	159	876,378	87,725	8,358	45	309	2,836	17.8	27 05	17.0	9.99	9 53
The Province	157	939,136	91,302	8,894	56	341	2,752	17.5	26 07	16.6	10.29	9 74

CREAMERY BUTTER.

TABLE No. XIII.—Showing by County Municipalities the quantity and value of butter made at 35 creameries in Ontario in 1887, and the number of creameries reported in operation.

Counties.	Creameries.			No. of Patrons.	Butter made		Cheese made.		Total value of produce.	Average price of butter per lb.	
	No. reported in operation.	Returns made. Making butter only.	Returns made. Making butter and cheese.		Quantity.	Value.	Quan.	Value.		1887.	1886.
					lb.	$ c.	lb.	$ c.	$ c.	cts.	cts.
Essex	1	....	....	.....	.....	.....	.....	.....	.....	.....	.....
Kent	1	1	....	47	12,984	2,907 25	.....	.....	2,907 25	22.39	22.00
Lambton	2	2	....	96	40,626	7,745 30	.....	.....	7,745 30	19.06	18.67
Huron	4	3	....	500	165,975	33,803 00	.....	.....	33,803 00	20.37	19.90
Bruce	8	8	...	987	348,650	68,601 67	.....	.....	68,601 67	19.68	18.59
Grey	6	6	....	685	230,123	46,735 89	.....	.....	46,735 89	20.31	19.06
Simcoe	1	....	....	.....	.....	.....	.....	.....	.....	.....	16.87
Middlesex	1	1	....	53	12,180	2,801 40	.....	.....	2,801 40	23.00	.. ..
Perth	3	2	1	211	68,630	14,369 60	37,392	4,000 00	18,369 60	20.94	18.33
Wellington	1	1	....	142	42,648	9,029 86	.....	.....	9,029 86	21.17	20.50
Waterloo	4	2	1	376	122,768	24,092 89	55,420	4,681 28	28,774 17	19.63	20.04
Halton	1	1	....	87	18,000	3,600 00	.....	.....	3,600 00	20.00	19.16
Durham	1	1	....	72	12,600	2,898 00	.....	.....	2,898 00	23.00	.....
Prince Edward	2	1	1	62	8,867	2,069 01	38,495	2,935 73	5,004 74	23.33	20.91
Leeds & Grenville	1	1	....	20	12,282	2,702 04	.....	.....	2,702 04	22.00	19.77
Dundas	2	1	....	33	22,823	4,659 80	.....	.....	4,659 80	20.42	21.87
Glengarry	1	1	....	24	17,420	4,006 60	.....	.....	4,006 60	23.00	21.41
Russell	2	....	....	.....	.....	.....	.....	.....	.....	...	.....
The Province (1887)	42	32	3	3,395	1,136,576	230,022 31	131,307	11,617 01	241,639 32	20.24	.....
The Province (1886)	47	27	2	2,368	823,853	160,797 78	96,156	5,529 34	166,327 12	.....	19.52
The Province (1885)	27	11	2	912	353,347	69,583 40	126,591	7,784 69	77,368 09	.....	19.69
The Province (1884)	23	5	3	540	147,924	32,087 76	259,688	20,785 86	52,873 62	.....	21.69
The Province (1883)	27	9	3	639	243,902	51,816 99	134,446	11,218 28	63,035 27	.....	21.33

BEES AND HONEY.

TABLE No. XIV.—Showing by County Municipalities and groups of Counties in Ontario, the number of colonies of bees, together with the quantity and value of the honey and wax produce as reported by 651 beekeepers for the season 1887.

Counties.	No. of returns.	No. of Colonies.				Produce of season.			Value of Honey and Wax produce.
		Put into winter quarters in the fall of 1886.	With which season 1887 commenced.	Increase in 1887.	Put into winter quarters in the fall of 1887.	Comb Honey.	Extracted Honey.	Wax.	
						lb.	lb.	lb.	$ c.
Essex	5	103	70	71	136	750	1,250	51	224 30
Kent	23	673	551	453	879	5,562	14,331	218	2,333 40
Elgin	16	645	535	323	864	4,414	16,725	208	2,454 30
Norfolk	11	208	151	130	276	1,316	3,360	58	526 00
Haldimand	19	426	288	259	475	2,033	8,555	173	1,143 01
Welland	17	408	291	235	464	3,886	1,439	171	817 01
Totals	91	2,463	1,886	1,471	3,094	17,961	45,660	879	7,498 02
Lambton	20	502	388	471	748	3,806	12,110	200	1,606 65
Huron	42	867	759	510	1,214	4,262	32,805	294	3,563 82
Bruce	33	654	466	498	888	1,140	26,290	170	2,732 80
Totals	95	2,023	1,613	1,479	2,850	9,208	71,205	664	7,903 27
Grey	30	678	495	471	967	2,344	21,797	384	2,458 09
Simcoe	28	776	560	546	991	4,819	27,465	275	3,604 27
Totals	58	1,454	1,055	1,017	1,958	7,163	49,262	659	6,062 36
Middlesex	34	1,525	1,113	765	1,771	3,827	36,634	385	3,878 48
Oxford	32	1,385	1,072	373	1,398	6,570	13,882	178	2,491 70
Brant	14	146	110	126	261	954	4,135	60	561 71
Perth	26	562	475	385	771	1,362	30,449	261	3,205 61
Wellington	21	502	429	346	697	2,505	16,570	148	2,299 20
Waterloo	18	505	453	292	702	3,755	17,883	179	2,337 00
Dufferin	12	257	222	150	321	1,485	6,446	69	935 33
Totals	157	4,882	3,874	2,437	5,921	20,458	125,999	1,280	15,709 03
Lincoln	13	616	484	312	794	6,664	12,727	195	2,593 35
Wentworth	13	420	297	183	467	2,305	14,100	119	1,873 65
Halton	13	313	257	186	404	1,453	13,366	172	1,584 10
Peel	18	765	480	375	833	3,207	22,962	306	2,900 34
York	30	763	584	426	943	5,496	18,920	279	2,787 65
Ontario	13	421	326	288	522	4,880	11,763	117	1,986 61
Durham	12	187	159	133	265	1,499	6,424	122	976 27
Northumberland	15	641	552	246	759	9,411	13,454	160	2,308 32
Prince Edward	6	316	296	115	409	2,302	8,025	63	957 93
Totals	133	4,442	3,435	2,264	5,396	37,217	121,741	1,533	17,968 22
Lennox and Addington	9	370	308	206	488	2,059	9,623	267	1,295 85
Frontenac	5	138	118	94	186	1,150	3,510	64	536 00
Leeds and Grenville	21	635	483	367	788	3,805	11,125	186	1,727 75
Dundas	3	54	51	56	90	1,090	885	18	265 50
Stormont	4	109	100	121	195	1,100	2,700	80	497 55
Glengarry	5	161	132	108	214	996	4,725	112	638 60
Prescott	7	229	125	154	302	2,112	4,408	41	708 70
Russell	1	15	15	21	36	.....	300	.....	30 00
Carleton	6	188	99	93	188	255	2,825	112	372 40
Renfrew	3	76	49	56	105	345	1,400	44	316 70
Lanark	12	590	436	314	683	3,173	9,556	236	1,572 56
Totals	76	2,565	1,916	1,590	3,275	16,085	51,057	1,160	7,961 61
Victoria	13	640	387	276	620	1,600	15,540	125	1,442 57
Peterborough	4	63	49	45	93	767	980	24	280 49
Haliburton	4	35	17	18	35	400	104	130	112 00
Hastings	7	249	191	118	298	915	10,625	150	1,123 00
Totals	28	987	644	457	1,046	3,682	27,249	429	2,958 06
Muskoka	10	160	159	98	213	453	4,440	62	801 55
Algoma	3	39	31	50	75	50	2,480	20	375 00
Totals	13	199	190	148	288	503	6,920	82	1,176 55
The Province	651	19,015	14,613	10,863	23,828	112,277	499,093	6,686	67,237 12

PART III.

VALUES, RENTS AND FARM WAGES.

VALUES OF FARM PROPERTY AND CROPS.

Below will be found in tabular form the value of farm property by districts for the years 1886 and 1887, including Lands, Buildings, Implements and Live Stock, together with the averages for the six years 1882-7, and the totals for the whole province for each year since 1882:

Districts.		Farm Land.	Buildings.	Implements.	Live Stock.	Totals.
		$	$	$	$	$
Lake Erie	1887..	88,250,744	23,913,481	6,333,437	12,854,990	131,352,652
	1886..	89,070,639	24,248,743	6,521,784	13,424,970	133,266,136
	1882-7	88,853,083	22,751,257	6,044,227	12,277,411	129,925,978
Lake Huron	1887..	74,763,952	18,595,893	5,185,486	12,083,846	110,629,177
	1886..	76,295,546	18,071,900	5,169,464	12,467,529	112,004,439
	1882-7	76,177,243	16,769,142	4,826,039	11,592,943	109,365,367
Georgian Bay	1887..	48,870,648	13,345,052	4,180,741	8,851,297	75,247,738
	1886..	49,497,503	13,223,108	4,215,214	8,991,612	75,927,437
	1882-7	49,368,033	12,338,311	3,862,919	8,551,749	74,121,012
West Midland	1887..	140,581,814	40,786,680	10,162,982	22,957,570	214,489,046
	1886..	143,619,122	41,005,934	10,828,942	23,908,730	219,362,728
	1882-7	142,787,922	38,329,740	10,057,576	22,510,444	213,685,682
Lake Ontario	1887..	136,086,496	42,922,112	10,884,220	21,223,001	211,115,829
	1886..	140,745,006	43,094,768	10,774,325	22,218,138	216,832,237
	1882-7	137,562,841	40,156,699	10,040,589	20,196,064	207,956,193
St. L. and Ottawa	1887..	102,827,722	32,634,723	8,948,219	18,692,471	163,103,135
	1886..	101,795,937	31,838,593	9,465,036	18,612,821	161,712,387
	1882-7	96,798,320	28,323,758	8,020,880	16,962,766	150,105,724
East Midland	1887..	40,900,266	11,436,589	3,204,864	6,759,268	62,300,987
	1886..	42,512,923	11,179,620	3,196,946	6,491,497	63,380,986
	1882-7	41,315,447	10,312,800	2,930,354	6,284,065	60,842,666
Northern districts	1887..	4,602,113	1,118,977	348,348	984,212	7,053,650
	1886..	4,473,152	1,085,546	359,225	1,093,638	7,011,561
	1882-7	4,458,751	1,036,426	339,418	963,823	6,798,418
The Province	1887..	636,883,755	184,753,507	49,248,297	104,406,655	975,292,214
	1886..	648,009,828	183,748,212	50,530,936	107,208,935	989,497,911
	1885..	626,422,024	182,477,905	48,569,725	100,690,086	958,159,740
	1884..	625,478,706	173,386,925	47,830,710	103,106,829	949,803,170
	1883..	654,793,025	163,030,675	43,522,530	100,082,365	961,428,595
	1882..	632,342,500	132,711,575	37,029,815	80,540,720	882,624,610
	1882-7	637,321,640	170,018,133	46,122,002	99,339,265	952,801,040

On the whole the value of farm property is lower than in 1886, the amounts standing as $975,292,214 to $989,497,911—a difference of $14,205,697. Farm lands, implements and live stock have each a share in causing the reduction, while buildings alone are estimated at a higher figure than in the preceding year. Although the area of occupied land was larger than in 1886 by 40,000 acres, and the area of cleared land larger by 170,000 acres, the total value of farm land has fallen from $648,009,828 to $636,883,755. This decrease is pretty evenly distributed over all the more settled parts of the province, but is greatest in the Lake Ontario counties, where it is $4,658,510. In the newer districts a slight advance is to be noted, consequent upon the continued ingress of settlers and improvement of new farms; thus in the St. Lawrence and Ottawa counties the value has been enhanced to the extent of $1,031,785 and in the Northern districts by $128,961. The amounts are, however, insufficient to make up for the depreciation in other parts, and the total value falls below the average for the six years. On the other hand farm buildings show an increase in total value over 1886 of $1,005,295; but in the Lake Erie, West Midland and Lake Ontario counties there has been a decline. The highest relative increase is to be found in the Northern districts, where there has been an advance of over 3 per cent.; next to these must be placed the Lake Huron counties at nearly 3 per cent., and the St. Lawrence and Ottawa counties at 2½ per cent. In the Georgian Bay counties, though the value was slightly increased, the advance was less than one per cent. In farm implements, the Lake Huron, Lake Ontario and East Midland groups are the only ones which exhibit an increase in value; in each of the other districts there has been a considerable reduction, insomuch that the total is about 2½ per cent. lower than in 1886. The aggregate value of live stock for the province amounts to $104,406,655 against $107,208,935 in the preceding year—a decrease occurring in every district except the St. Lawrence and Ottawa and East Midland groups. The total value of farm property of all kinds, it will be observed, has fallen below that of 1886 in all the groups of counties with the one exception of the St. Lawrence and Ottawa.

A comparison of the totals for the last six years indicates a very variable course throughout in the value of farm lands. In 1883 the high figure of $654,793,025 was reached, but in the next year it tumbled to $625,478,706; again in 1885 the 650 millions was nearly attained only to drop back to $636,883,775 in 1887. The values of the other classes of property present a greater uniformity during this period. A gradual increase since 1882 marks the value of farm buildings, and the figures for farm implements vary only within narrow limits. The several appraisements made for live stock have been fairly constant, and although in 1886 the value increased about seven millions, it was lowered again last year to the extent of nearly three million dollars.

The respective average values of the different classes of farm property per acre of occupied land for the last two years are presented in the following table, arranged by county groups. The totals for each district are also given as well as the averages for the entire province:

Districts.	Farm Land.		Buildings.		Implements.		Live Stock.		Totals.	
	1887.	1886.	1887.	1886.	1887.	1886.	1887.	1886.	1887.	1886.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	37 71	37 98	10 22	10 34	2 70	2 78	5 49	5 73	56 12	56 83
Lake Huron	32 84	33 53	8 17	7 94	2 28	2 27	5 31	5 48	48 60	49 22
Georgian Bay	24 19	24 57	6 60	6 56	2 07	2 09	4 38	4 46	37 24	37 68
West Midland	43 17	44 14	12 52	12 60	3 12	3 33	7 05	7 35	65 86	67 42
Lake Ontario	44 58	46 15	14 06	14 13	3 57	3 53	6 95	7 29	69 16	71 10
St. Law. and Ottawa	19 79	19 59	6 28	6 13	1 72	1 82	3 60	3 58	31 39	31 12
East Midland	15 64	16 37	4 37	4 31	1 23	1 23	2 58	2 50	23 82	24 41
Northern districts	4 42	4 35	1 08	1 06	0 33	0 35	0 95	1 06	6 78	6 82
The Province	29 22	29 78	8 47	8 44	2 26	2 32	4 79	4 93	44 74	45 47

In the Lake Erie and West Midland districts the value of each class per acre is less than in 1886. In the Lake Huron counties a slight increase for buildings and implements is observed, but the decrease in value of other property preponderates, with consequent lowering of the total by 62 cents per acre. The St. Lawrence and Ottawa counties have the honour of being the only district in the province showing an increased total value per acre, and they can boast of only 27 cents advance. The totals for the Georgian Bay counties and Northern districts show little divergence from those of the preceding year.

Comparing the provincial averages for the two years an improvement is noticeable in one instance only, that of farm buildings, which show an advance of three cents per acre whereas all the other classes exhibit a monotonous decrease, and the total average value per acre of all kinds of farm property is quoted at $44.74 against $45.47 in 1886.

Value of Live Stock per 1,000 acres.—The following table shows the average value of live stock per 1,000 acres of cleared land for 1886 and 1887 with an average based upon the returns for the six years 1882-7. The figures are given for each district and for the province as a whole :

Districts.	1887.	1886.	1882-7.
	$	$	$
Lake Erie	9,788	10,351	9,710
Lake Huron	10,004	10,420	10,104
Georgian Bay	8,937	9,359	8,959
West Midland	10,362	10,913	10,470
Lake Ontario	9,365	9,914	9,111
St. Lawrence and Ottawa	8,462	8,605	8,009
East Midland	8,484	8,253	8,077
Northern districts	9,011	10,615	10,003
The Province	9,399	9,801	9,263

The above, like the two preceding tables, is characterized by a general depreciation in values. In the East Midland district, it is true, there is an advance of $231, or nearly 3 per cent., but all the others show a decided decrease—the Lake Erie group of 5½ per cent., the Lake Huron group of 4 per cent., the Georgian Bay group of 4½ per cent., the West Midland of 5 per cent., the Lake Ontario of 5¼ per cent., the St. Lawrence and Ottawa of 1⅔ per cent., and the Northern districts of over 15 per cent. All this has resulted in the lowering of the provincial average from $9,801 to $9,399 ; the latter figure is still, however, somewhat higher than the average for the six years.

Farm Rents.—The statistics regarding leased farms and rentals have been compiled from the schedules received by the Bureau, and are included in the following table. The

figures show the percentage of farm land leased, the average rent per acre and the per cent. ratio of the rental to the value of the property :

Districts.	Per cent. returned as leased.	Average area of leased farms.		Average value of leased farms.		Average yearly rental.	Per cent. ratio of rental to value of farm.	Rent per acre based on—			
		Acres occupied	Acres cleared.	Land.	Buildings.			Acres occupied.		Acres cleared	
								1887.	1886.	1887.	1886.
				$	$	$	%	$ c.	$ c.	$ c.	$ c.
Lake Erie.....	16.6	106.9	76.7	4,613	1,254	221	3.77	2 07	2 13	2 88	3 05
Lake Huron.....	12.5	107.8	76.4	4,013	1,084	209	4.10	1 94	2 03	2 74	2 86
Georgian Bay	15.6	120.5	83.1	3,440	941	186	4.25	1 55	1 48	2 25	2 21
West Midland.....	14.5	117.5	89.0	5,106	1,417	272	4.17	2 32	2 28	3 06	3 06
Lake Ontario.....	22.9	116.4	94.6	5,268	1,526	305	4.49	2 62	2 83	3 22	3 47
St. L. and Ottawa..	11.6	134.9	81.4	3,377	1,112	180	4.01	1 33	1 43	2 21	2 34
East Midland	12.2	138.4	86.4	3,933	1,049	216	4.34	1 56	1 59	2 50	2 66
Northern districts ..	4.4	162.3	34.3	1,084	340	67	4.71	0 41	0 40	1 96	1 70
The Province 1887	15.0	118.1	84.5	4,458	1,270	239	4.17	2 02	.....	2 83	.....
The Province 1886	15.3	121.1	85.7	4,808	1,340	255	4.15	.....	2 10	.....	2 97

There would appear to be very little difference in the number of farms leased compared with last year; the Lake Ontario counties still show the largest percentage, and the Northern districts the smallest. The depreciation in value of farm property the whole country over was accompanied by a correspondingly lower yearly rental; nevertheless the per cent. ratio of rental to value has been maintained and even slightly exceeded. In the Lake Erie counties, however, it fell from 4 to 3.77 per cent., and in the Northern districts with an average yearly rental of $67 the per cent. ratio of rental to value rose from 4.34 to 4.71. Calculated for each acre of land occupied the rental shows 8 cents decrease, and 14 cents for each acre of cleared land. The average yearly rental per farm compared with 1886 was as $239 to $255.

Market Prices.—The following table gives the average prices paid for agricultural produce in the principal markets of the province during the last six months of 1887. The data upon which the statement is based are the market reports appearing in the newspapers published in the various towns and cities named in the table. The figures given for wheat, barley, oats, rye, pease, hay and wool represent the average prices paid for these articles as shown by the local market reports from July to December. In order to get the average of prices for corn, buckwheat, beans, potatoes, carrots and turnips quotations were taken only for the last three months of the year, during which season the bulk of these crops are harvested and marketed. The average price paid for each kind of grain for the last six months of the past six years is also shown in the table, together with a general average

covering the same period, and the average price of corn, buckwheat, beans, hay, wool and roots in 1887 1886, 1885 and the three years period 1885-7 :

Markets.	Fall Wheat, per bush.	Spring Wheat, per bush.	Barley, per bush.	Oats, per bush.	Rye, per bush.	Pease, per bush.	Corn (in ear), per bush.	Buckwheat, per bush.	Beans, per bush.	Potatoes, per bush.	Carrots, per bush.	Turnips, per bush.	Hay, per ton.	Wool, per lb.
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	$ c.	cts.
Brantford	76.1	76.1	56.3	33.7	49.2	52.9	28.8	38.6	75.0	70.4	....	...	9 35	19.9
Brockville	78.2	78.2	47.5	37.1	47.5	61.0	....	44.8	95.0	47.6	....	36.2	12 21	20.0
Chatham	77.3	77.3	49.1	27.6	51.3	47.8	21.9	....	122.5	73.3	....	....	7 50	.....
Cobourg	80.1	80.1	65.5	37.3	48.8	57.8	....	....	....	49.8	....	....	10 43	19.0
Guelph	78.4	78.0	58.9	33.6	51.0	55.9	....	....	.....	60.1	....	11.4	9 85	23.8
Kingston	78.2	78.6	60.1	35.0	52.5	57.9	32.8	51.0	.....	61.4	48.3	47.8	11 10	19.7
Lindsay	76.0	78.0	63.2	30.3	50.0	51.5	....	....	.....	47.1	....	....	9 22	23.0
London	76.0	75.0	49.6	32.9	51.9	52.4	29.0	45.5	.....	70.5	22.5	25.7	10 69	22.5
Ottawa	82.7	84.2	52.3	33.6	39.0	55.4	31.8	....	.....	54.4	47.5	36.0	10 76	19.5
Peterborough	79.1	78.8	68.3	34.8	47.1	61.2	....	....	.....	60.9	....	....	12 26	20.3
St. Thomas	77.4	77.4	48.3	31.5	....	48.0	26.6	..	.....	66.5	....	30.0	8.95	22.6
Stratford	78.2	77.6	50.4	30.4	....	53.2	....	....	.....	61.8	....	....	7 60	21.0
Toronto	80.2	79.2	61.5	37.5	56.0	59.5	....	....	.....	62.4	30.3	30.6	13 80	23.3
The Province.. 1887..	78.4	78.0	56.7	34.6	49.5	55.9	28.7	45.0	97.9	62.8	28.0	29.5	11 62	22.1
1886..	73.6	72.5	51.3	32.0	52.2	52.6	27.6	33.7	83.7	44.9	29.5	24.6	9 69	19.1
1885..	81.5	80.6	55.2	31.5	55.2	58.0	27.9	39.2	80.0	41.1	32.5	23.6	9 85	17.4
1884..	80.5	81.4	53.6	33.1	59.7	64.4	....	....	.....	....	....	....	.....	.....
1883..	105.0	107.0	57.0	38.0	62.0	71.0	....	....	.....	....	....	....	.....	.....
1882..	101.0	106.0	65.0	43.0	64.0	74.0	....	....	.....	....	....	....	.....	.....
1882-7	87.2	87.8	56.9	35.2	60.9	61.7	28.0	38.5	85.4	47.2	30.3	25.5	10 38	19.4

There has been an advance in nearly all the items over the prices paid in the previous year, rye and carrots being the only articles showing a lower average than in 1886. Compared with the annual average, however, an increase is observable only in corn, buckwheat, beans, potatoes, turnips, hay and wool. Barley comes within 2c. of the six years average, but all the other grains are decidedly below the figures for that period. The highest average market price for fall wheat was paid in Ottawa (not a large fall wheat market, however), where it reached 82.7c., Toronto being second at 80.2c. Ottawa also led as a spring wheat market, being 6.2c. above the average of the province. The best average price for barley was paid in Peterborough, Cobourg and Lindsay coming next in order. Toronto gave the highest average price for oats and rye, while Peterborough offered the best figure for pease, Brockville following close. The prices quoted for corn are reckoned on the value of corn in the ear, that being the basis upon which all estimates of this grain are made by the Bureau. Beans made a considerable advance in price, and the actual average price may be placed even higher than the figures given in the provincial average, as the bulk of the bean crop is grown in Kent, and the figures quoted for Chatham would represent the price paid for the greater part of the yield of the province. Potatoes, which average 62.8c. against 44.9c. in 1886, and 41.1c. in 1885, and 47.2c. for the three years 1885-7—the largest proportionate increase of any item in the table—averaged 73.3 in Chatham, 70.5 in London and 70.4 in Brantford. A very substantial increase is

also noted in hay, which advanced nearly $2 a ton compared with the previous year, and shows an increase of $1.24 per ton over the average of the three years period. The average price paid in Toronto for hay was $13.80, and over $12 was paid in Peterborough and Brockville. The value of wool is steadily increasing, the average price for 1887 being exactly 3c. per lb. more than the previous year, and 2.7c. higher than the average for the three years 1885-7. Guelph and Toronto paid the best prices for wool. The prices paid for carrots and turnips are presumably those paid market gardeners and other retailers of these roots.

Values of Crops.—The appended table gives the values of each of the field crops for the years, 1887, 1886, 1885, together with the value of the yield per acre, based upon the average market price for each article during the various years named. The values of the first six items are averaged for the six years 1882-7, but the values of corn, buckwheat, beans, hay, potatoes, carrots and turnips are given only for the three years 1885-7:

Crops.	1887.		1886.		1885.		Average 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.	$	$ c.
Fall Wheat ..	11,321,439	12 61	13,300,361	15 00	17,504,799	20 00	17,101,975	17 66
Spring Wheat	4,393,831	9 06	6,900,951	11 95	7,358,684	9 20	8,533,096	13 63
Barley	9,715,448	12 66	10,009,799	13 60	9,126,540	15 27	10,896,771	14 83
Oats	17,247,443	10 25	18,772,995	11 57	17,397,369	11 27	19,161,498	12 58
Rye.....	442,969	6 48	577,573	8 52	701,871	8 96	1,157,976	10 05
Pease	6,804,892	9 36	8,439,004	11 99	8,123,591	12 57	7,984,625	12 77
Corn	2,412,164	14 72	2,982,265	19 06	2,996,848	17 86	2,797,092	17 19
Buckwheat...	461,409	7 19	565,725	7 99	600,024	9 71	542,386	8 27
Beans.....	270,180	13 33	403,494	19 15	397,251	16 12	356,975	16 23
Hay	35,947,748	15 76	29,016,182	12 64	32,033,727	14 12	32,332,552	14 17
Potatoes	6,705,784	47 80	7,189,548	51 30	8,668,460	54 27	7,521,264	51 26
Carrots.....	589,592	64 72	1,029,710	111 12	1,125,254	124 70	914,852	100 16
Turnips	9,266,970	87 99	11,577,019	117 02	9,708,505	94 90	10,184,165	99 66
Total	105,579,869	14 25	110,764,626	15 00	115,742,923	15 78	119,485,227	16 19

The decline in the value of field crops has been very general. Hay is the only article which shows an increase both in the total value and in the value per acre, compared with 1886 or the average of the six years period. The falling off in the total value is $5,184,757 compared with the previous year, and $13,905,358 compared with the average for the series of years. This decrease in value, although there has been a slight increase in the total area under cultivation, and all the crops save rye and corn realized higher prices than in 1886, shows how general the failure has been in the grain and root crops. The average value per acre, which was reduced from $15.78 in 1885 to $15 in 1886, is still further reduced in 1887 to $14.25, that amount being $1.94 below the average annual value per acre. Among the grains, the greatest falling off in the value per acre is the case of spring wheat, which shows a decline of about one-third compared with the average for the six years 1882-7.

The following table shows the total value of field crops and the value per acre by

county groups and for the province for 1887 and two preceding years, together with the average for the six years 1882-7 :

Districts.	1887.		1886.		1885.		Average 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.	$	$ c.
Lake Erie	12,080,651	12 98	13,485,030	14 67	14,995,559	16 33	13,947,418	15 35
Lake Huron	11,936,938	15 31	11,438,427	14 86	12,997,937	17 08	12,886,786	16 83
Georgian Bay.....	9,447,927	14 42	9,447,776	14 62	9,825,779	15 22	10,688,263	16 36
West Midland	22,805,391	15 73	23,691,683	16 68	24,684,983	17 11	25,595,487	17 89
Lake Ontario.....	22,386,070	13 94	24,623,942	15 46	25,444,492	16 18	26,426,608	16 57
St. L. and Ottawa .	18,975,474	13 85	19,046,820	13 66	19,554,504	14 31	20,613,885	14 84
East Midland	6,459,491	12 00	7,870,811	14 02	7,046,924	12 94	7,956,141	14 30
Northern districts..	1,487,927	18 00	1,160,137	14 26	1,192,745	14 36	1,370,639	16 56
The Province....	105,579,869	14 25	110,764,626	15 00	115,742,923	15 78	119,485,227	16 19

There is an increase in the total value in the Lake Huron counties, and in the Northern districts compared with figures for the previous year ; but increase in the value per acre is observable only in the Lake Huron and St. Lawrence and Ottawa groups and in the Northern districts, more especially in the latter. The Lake Erie, Lake Ontario, St. Lawrence and Ottawa and East Midland groups were below the average value per acre for the province, and the Northern districts only showed a higher value per acre than that of the annual average for the province.

The values of each of the field crops per acre in 1887 and 1886, and the average for a series of years, are given by county groups and for the province in the following table :

Crops.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern districts.	The Province.		
									1887.	1876.	1882-7*
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Fall Wheat.....	12 54	11 67	13 36	12 37	13 67	11 34	13 24	19 06	12 61	15 00	17 66
Spring Wheat ...	8 23	6 46	7 95	7 06	9 38	10 93	8 78	14 15	9 06	11 95	13 63
Barley	11 41	13 27	12 78	13 49	12 79	12 26	11 25	13 25	12 66	13 60	14 83
Oats	10 76	11 36	9 89	11 15	10 02	9 47	8 72	10 89	10 25	11 57	12 58
Rye	6 19	8 17	8 30	6 82	5 98	7 01	6 37	8 30	6 48	8 52	10 05
Pease	6 82	11 64	10 77	10 44	8 16	9 17	7 86	14 57	9 36	11 99	12 77
Corn	15 02	15 41	9 05	14 22	13 18	16 66	14 09	14 78	14 72	19 06	17 19
Buckwheat	7 01	11 15	6 02	5 44	8 34	6 57	6 82	13 82	7 19	7 99	8 27
Beans	12 00	15 56	19 81	16 58	15 60	17 81	13 64	16 23	13 33	19 15	16 23
Hay	15 35	17 92	15 85	16 65	14 85	15 72	13 43	15 74	15 76	12 64	14 17
Potatoes	29 14	46 10	49 85	48 58	41 85	58 69	43 80	79 74	47 80	51 30	51 26
Carrots.....	52 22	70 33	56 63	76 28	68 28	58 20	54 65	60 07	64 72	111 12	100 16
Turnips	75 14	90 83	81 72	99 90	84 37	64 79	69 38	73 91	87 99	117 02	99 66
Average of all field crops.... 1887	12 98	15 31	14 42	15 73	13 94	13 85	12 00	18 00	14 25	.....	.....
Average of all field crops.... 1886	14 67	14 86	14 62	16 68	15 46	13 66	14 02	14 26	.....	15 00	.....
Average of all field crops.... 1882-7	15 35	16 83	16 36	17 89	16 57	14 84	14 30	16 56	.....	.....	16 19

* The averages of corn, buckwheat, beans, hay, potatoes, carrots and turnips are for the three years period, 1885-7.

While the average value per acre of fall wheat is only $12.61, compared with $15 in 1886, and an average of $17.66 for the six years 1882-7, the yield per acre in the Northern districts is reckoned as worth $19.06. None of the other groups, however, reach the average of the six years, or even the average of the previous year. Spring wheat, rye and buckwheat show the least values of the grains, and their best records were also made in the Northern districts. Barley falls below its record of 1886 and the six years' average, and even in the West Midland group, where the best value of 1887 is found, the figures do not reach the provincial average of 1886, being only $13.49 per acre against $13.60 for the previous year, and $14.83 for the six years period. The West Midland counties also lead in the value per acre of carrots and turnips. Oats found their best value per acre in the Lake Huron group, where $11.36 is registered, but this sum is below that of the previous year as well as the annual average. The value of hay is high per acre, being $15.76 for the province against $12.64 in 1886, and $14.17 for the three years 1885-7 ; in the Lake Huron counties, however, the value in 1887 is placed at $17.92 per acre. The Georgian Bay counties tied the Northern districts in the value of rye, and are also credited with the best value per acre for beans. The Northern districts show to advantage in the value per acre of pease, being $1.80 higher than that of the average for the six years 1882-7. The Northern districts also made a magnificent showing in potatoes, the value being $79.74 per acre against a provincial average of $47.80 in 1887, $51.30 in 1886, and $51.26 for the three years 1885-7. The St. Lawrence and Ottawa group gives the highest value per acre for corn, but the figures are below those of the previous year and the average of the three years 1885-7.

The table following shows the per cent. ratios of the value per acre in 1887 to the average value for the six years 1882-7, and is given by districts and for the province for each of the crops:

Districts.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Rye.	Pease.	Corn.	Buck-wheat.	Beans.	Hay.	Potatoes.	Carrots.	Turnips.	All field crops.
Lake Erie.....	76	67	83	83	66	61	82	92	78	105	78	60	84	85
Lake Huron.....	66	55	87	88	81	84	87	140	92	122	89	65	85	91
Georgian Bay	71	61	87	83	73	79	69	92	113	126	84	54	80	88
West Midland.....	69	56	85	83	70	78	83	79	101	110	102	71	95	89
Lake Ontario.....	74	65	86	77	66	66	90	100	89	104	92	64	86	84
St. Lawrence and Ottawa	68	75	87	79	62	74	107	76	88	110	101	69	80	93
East Midland.....	73	66	81	77	66	66	106	84	85	110	79	59	83	84
Northern districts	94	83	99	95	68	101	120	133	74	132	187	81	100	109
The Province.....	72	66	85	81	64	73	86	87	82	111	93	65	88	88

The value of all the crops of 1887 was 88 per cent. of the average annual value, and in no group save the Northern districts, where 109 was credited, was the average reached for the entire crop. Taking the first six articles named, none touched 100 ; but in hay all the districts went over the average value, and the total of the province for that crop is 11 per cent. above the average. Rye, carrots and spring wheat are 64, 65 and 66 respectively in the averages for the province.

COST OF GROWING CROPS.

One of the most interesting features of agricultural economics is the cost of growing the various crops. But at the same time it is one of the most difficult to present in a satisfactory manner. The items which go to make up cost are numerous, and they are besides of a kind requiring careful record for the purpose of a really accurate account.

It may be doubted, indeed, if there is a single farmer in the country who is able to furnish the details of a crop account with absolute accuracy. Yet it is possible to make a very close approximation of cost in so far as the greater number of items are concerned; and, having confidence in the intelligence and judgment of the correspondents of the Bureau, the Secretary was led to request them to furnish the necessary data with as near an approach to accuracy as was possible in the individual circumstances. The number of returns received, sufficiently complete to be used in tabulation, was 197, and the results are presented in Table xxv giving by groups of counties the cost of growing the chief staple crops and the average value of the product. The following table is a summary of the statistics, giving cost of production and value of products for the whole province, computed on the basis of prices in 1887:

Schedule of items per acre.	Fall Wheat.	Spring Wheat.	Barley.	Oats.	Pease.	Hay and Clover.	Corn.	Potatoes.	Turnips.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 95	2 04	2 00	1 91	1 90	.....	2 22	2 62	3 25
Cultivating, etc	1 16	70	76	74	75	.....	1 47	1 79	1 86
(1) Manure, 1887*	3 15	1 34	98	2 80	2 80	.....	3 01	3 07	5 08
(2) Manure applied previously*	1 92	1 73	1 54					2 27	2 19
Seed	1 49	1 45	1 21	85	1 44	.....	33	6 31	53
Sowing, drilling or planting.	42	39	39	40	41	.....	82	2 54	1 04
After fitting or cultivation.	39	38	36	35	35	.....	2 11	2 65	3 32
Harvesting	1 89	1 65	1 67	1 70	1 84	1 86	2 19	4 68	4 36
Threshing, husking, etc	1 07	1 03	1 00	1 01	1 10	.....	3 08	.....	.....
Marketing†	85	77	89	92	84	2 51	2 18	4 68	7 53
Wear of implements	38	26	27	34	28	27	35	27	43
Rent, taxes and insurance	3 76	3 76	3 76	3 76	3 76	3 76	3 94	3 76	3 82
Total cost per acre	19 43	15 50	14 83	14 78	15 47	§8 40	21 70	34 64	33 41
Value of grain‡	14 13	10 95	15 77	12 99	11 43	.....	19 82	54 43	39 94
Value of straw‡	2 95	2 66	2 86	3 60	2 44	13 33	5 98	.....	1 33
Total value per acre	17 08	13 61	18 63	16 59	13 87	13 33	25 80	54 43	41 27
Seed sown or planted..bush.	1.77	1.73	1.98	2.34	2.32	.24	.38	11.52	lb.2.37
Average yield .....bush.	17.8	14.2	24.8	31.7	16.5	1.47	72.8	105.9	387.3
Manure put on land....tons	9.8	9.0	8.3	.....	.....	.....	.....	13.9	15.3
Per cent. of value charged to crop	46.4	51.7	48.7	.....	.....	.....	.....	44.9	54.5

The farmers who have supplied the data from which this table has been prepared are above the average of their class in the province, as would seem to be clearly indicated by a comparison of the products of their crops. Thus their yield of fall wheat per acre was 17.8 bushels, against 16.1 for the whole province; of spring wheat, 14.2, against 11.6; of barley, 24.8, against 22.3; of oats, 31.7, against 29.6; of pease, 16.5, against 16.8; of corn, 72.8, against 51.3; of potatoes, 105.9, against 76.1; of turnips, 387.3, against

* In the two items of manure—(1) applied on 1887 crop, and (2) applied on previous crop—the value includes cost of manure itself and cost of putting on land, and only the estimated quantity consumed as food by plants in the year, whether then or previously applied, is charged against the crop, the last item of the schedule showing the per cent. so charged when applied to the crop of the year.

† The cost of marketing an acre's product is based on the cost of taking to the usual market place.

‡ The value of product is based on the average selling price.

§ The portion of cost of preparing land for hay and clover crop is not entered.

298.2; and of hay and clover, 1.47 ton, against 1.36. In the growth of pease alone the provincial average is larger than the average of the correspondents who furnished the returns from which the foregoing table has been compiled; yet the result is far from satisfactory. The crop of fall wheat was grown at a loss of $2.35 per acre, of spring wheat at $1.89, and of pease at $1.60. On the other hand, however, the crop of barley was grown at a profit of $3.80 per acre, of oats at $1.81, of hay and clover at $4.93, of corn at $4.10, of potatoes at $19.79, and of turnips at $7.86. The cost of producing hay and clover is incomplete, no entries having been made of the proportion of cultivation to be charged against it, or of the manure, or of the price of seed and the labor of seeding. These items would reduce the apparent profit of the crop somewhat—possibly by $1.50 an acre or more. The hoed crops are, on the whole, the most profitable, and especially potatoes, which show a clear gain of nearly $20 per acre. Barley is king of the cereals, it having been grown at a profit of $3.80 per acre. But in considering this question of the cost of producing crops, the important fact must not be overlooked that last year's yield was lighter than usual, and that prices ruled exceptionally low. Had the averages of the preceding five years been reached, the results would not have failed to be more gratifying, in spite of the low prices.

Rotation of Crops.—The question of the rotation of crops is one which has evoked a great variety of replies. It is quite obvious that so far nothing like a standard system of rotation has been adopted even on similar soils; each farmer is a law unto himself in this regard. A large number of systems are reported, and while the courses range chiefly from six to eight years, the combinations are kaleidoscopic in their variety. The averaging of the rotations, if such a thing were patiently worked out, would probably show that two or three years of hay and pasture were alternated with four or five years of grain and roots; but it is doubtful whether this "composite" system of rotation would be practicable on the average Ontario farm, any more than one of those composite photographs of the class of '87 would do to represent the best type of beauty and physical development in its membership. Pease is the favorite crop to sow on sod, and there appears to be greater tendency than formerly to run to pasture. Summer fallowing is not growing in favor; in fact some who have their land cleared claimed to have ceased practicing the system. The following extracts on rotation are made from the reports of correspondents who have given data for computing the cost of growing crops:

W. G. Morse, Mersea, Essex: Clover on wheat, cut once, then pastured; corn; then pease or oats with manure on oat stubble. My land is a sandy loam.

Robert Manery, Mersea, Essex: Wheat, corn, oats and grass.

A. M. Wigle & Son, Gosfield, Essex: Clover two years, cut, and pastured one; then wheat, corn, etc.

George A. Wintemute, Maidstone, Essex: Wheat, corn and oats.

Arthur J. Arner, Gosfield, Essex: Corn, oats and wheat one year each, and hay and clover two years.

E. B. Tole, Harwich, Kent: Hay or pasture, followed by beans, wheat, corn, oats and wheat. Then seeded; hay one year, pasture one year, then beans again.

J. G. & F. B. Stewart, Raleigh, Kent: Pasture, oats or clover, corn, oats or pease, wheat, hay, hay or pasture.

James Davidson, Yarmouth, Elgin: Wheat, clover (two years), corn or pease, manured.

Dugald Campbell, Dunwich, Elgin: Plow sod, sow pease, plow, sow fall wheat, plow next fall, plant corn in spring; plow in fall and sow oats or barley in following spring; seed down with clover and timothy.

Samuel Maccoll, Dunwich, Elgin: Fall wheat, oats, barley or corn; seed for meadow with oats and barley; two crops of hay, then summer fallow and sow to wheat. The principal part of the manure is put on the summer fallow.

A. McKillop, Aldborough, Elgin: Wheat, barley, clover, etc.

Wm. Clark, Aldborough, Elgin: Pease on sod, wheat, corn and potatoes, oats or barley, with grass seed.

Arthur Simenton, Seneca, Haldimand: Fall wheat, and seed with clover and timothy, which I let stand in hay for two or three years; then fall plow and sow with oats, pease and barley the next spring. Sow wheat after the pease and barley, summer fallow after oats, and sow with wheat in the fall. Put all the manure on summer fallow.

Wm. Hedges, Walpole, Haldimand: Fall wheat, seeds, spring crop for two years, fallow. It is impossible to give you an exact account of everything in the schedule for want of space. For instance, in the case of plowing for wheat, sometimes we plow but once, and again we plow three times. We reckon that it is worth $1.50 to plow an acre once. As to the cost of wear of implements, we have a good deal to take into consideration. Take plows, and harrows, harness, cultivators, mowers, reapers, binders, waggons, drills, etc., and you will see that the farmer has a good deal of capital invested in implements; besides, there is the wear of his horses, which must be taken along with the rest, for they wear out too, the best last only from 10 to 15 years. Then again, the cost of cultivating is greater some years on our clay land than it is in other years, so much depends upon the condition of the soil at seeding time. Cutting, harvesting, threshing and the like also cost more in some years than in others.

Wm. Mussen, Oneida, Haldimand: Fallow, wheat, seed down with clover and timothy seed, three years in grass, then pease, oats and barley, seed down for three years.

Joseph Martindale, Oneida, Haldimand: Pease, wheat, oats and then summer fallow for barley, seed down with clover.

J. H. Best, Walpole, Haldimand: Plowing clover for wheat or barley; oats after wheat, and wheat after barley, pease on sod plowed down, wheat or barley after.

J. R. Martin, Cayuga N., Haldimand: Chiefly permanent pasture, oats and pease on sod, followed by barley, fall wheat and roots, these seeded often with second crop; after roots barley.

Joel Misener, Moulton, Haldimand: I generally seed down to clover and timothy upon fall wheat and barley and oats if the land is well cleaned and manured. I think a corn stubble well manured is good for turnips the next year, although last year was so dry that the corn and potatoes were a failure.

Wm. Chalmers, Sherbrooke, Haldimand: Wheat, timothy and clover three years, oats, pease, wheat, and then seed down again.

John H. Houser, Canborough, Haldimand: Pease, then oats or fall wheat, after oats summer fallow sowed with wheat, then seed down.

V. Honsberger, Cayuga S., Haldimand: (1) Summer fallow, pease and oats, followed by fall wheat in fall. (2) Partly seeded with clover in spring, balance plowed in fall sowing to barley, oats or planting corn, seeding if put in barley or oats. (3) After seeding take off one crop of clover, followed by pasture the next year in part, and plowing under part in a green state as manure, and sowing to fall wheat; no regular rotation.

L. Buckton, Crowland, Welland: Wheat after hay or pasture, manured the previous winter or spring, oats or barley after wheat; sometimes wheat after oats and hay after wheat; three or four crops of hay and break up again.

James Smith, Willoughby, Welland: Pease, oats, fall wheat and hay.

James McClive, Bertie, Welland: Meadow three years, oats one year, corn or roots one year, fall wheat one year.

J. W. Overholt, Wainfleet, Welland: Hay, wheat and barley, oats, pease, corn, buckwheat, potatoes, turnips.

Alex. Reid, Crowland, Welland: Seeding to grass, three years in meadow and one pasturage, oats to follow; then three years spring crops, then summer fallow, then sow fall wheat and seed to grass.

C. Riselay, Bertie, Welland: Corn and oats on sod, followed by barley and pease in order named; then wheat and seed to clover, timothy and alsike.

J. A. Ramsden, Humberstone, Welland: Field taken for summer fallow with most weeds or thistles, manured with farmyard manure, sown with wheat seeded with clover, allowed to grow up next year, plowed under in June, then sown with wheat and seeded again one year, plowed again for corn or pease, then barley or oats, next year potatoes, roots, etc.

F. A. Hutt, Stamford, Welland: Fall wheat, hay and clover, spring crops.

D. Schooley, Bertie, Welland: Fallow manured for wheat, seed with clover two years, then oats or corn on sod.

D. G. Holcomb, Thorold, Welland: Wheat, hay, pasture, fallow, wheat.

Joseph H. Patterson, Dawn, Lambton: Corn, oats or barley, wheat, then seeded for meadow.

W. Mowbray, Moore, Lambton: Two crops of hay, one year pasture, two of oats, then fall wheat and seed.

Robert Rae, Bosanquet, Lambton: Wheat, barley, oats, hay and clover.

James Lovell, Brooke, Lambton: A six years course; three years in grain and three years in grass. No corn or roots except a few potatoes.

William Elliott, Grey, Huron: Oats, pease and roots, seed down timothy and clover, hay pasture.

Robt. Currie, Wawanosh E., Huron: Sod plowed, sown to pease; once plowed, sown to fall wheat; plowed once and sown to oats; turnips the following year; then spring wheat or barley, then seeded to hay two years and pastured two years. That is nine years rotation, four years hay or pasture, four years grain crop and one year roots. Manured once in nine years.

James McCallum, Hullett, Huron: Fall wheat, pease, oats, summer fallow for wheat and seed down.

John Kernighan, Colborne, Huron: Oats, pease, and corn; wheat and turnips, barley seeded; say two years pasture.

George Fortune, Turnberry, Huron: First year summer fallow after grass for fall wheat; second year, after wheat turnips and pease; third year, barley after turnips, oats, pease and seed to grass, pasture and hay for three years.

John Anderson, Wawanosh E., Huron: Sod plowed and sowed to pease and plowed twice, fall wheat, some of the field turnips and some either oats or barley; after barley seed to clover and timothy.

Edwin Gaunt, Wawanosh W., Huron: On home farm break up sod, sow pease, then fall wheat, next oats, then roots, then barley, sowed to grass and mow two years. On my other farm I break sod and sow oats, next fall wheat, then barley, sow to grass, mow two years and pasture one year.

E. Cooper, Howick, Huron: Two crops of grain and two crops of grass, alternately, as nearly as can be carried out.

Wm. Isbister, Morris, Huron: Pease on sod, then fall wheat, oats, and after oats either roots or summer fallow; if roots, seed down with barley or wheat.

Thos. Wilson, Huron, Bruce: Pease on sod, barley, oats, then summer fallow for fall wheat.

S. Ballachey, Elderslie, Bruce: Hay, pasture, pease, wheat, hay, pasture, pease, oats, fallow, wheat, grass.

M. L. Martin, Bruce, Bruce: Fall wheat, pease, oats, roots or summer fallow.

James Johnston, Carrick, Bruce: Two grain crops and two hay or pasture. Turnip and potato ground in addition to the two grain crops.

Thos. Inglis, Carrick, Bruce: I have no particular rotation. It is all in grass except three fields of 20 acres which we change with wheat, pease and oats, giving it all the manure, and graze sixty head of cattle yearly for the English market on the grass land.

James Tolton, Brant, Bruce: Pease after sod, then fall wheat followed by oats, then manured for turnips: after turnips spring wheat with seeding for grass; mow twice (or two years), pasture one year and break up for pease.

James Edge, Glenelg, Grey: Pease, wheat or oats, summer fallow, wheat or barley, meadow, pasture.

Ephraim Brodie, Artemesia, Grey: Hay, pease, wheat or barley, oats, summer fallow, fall wheat, clover.

A. Malcolm, Collingwood, Grey: After grass oats or pease, roots, wheat, barley, seed down, cut two years, pasture one.

Daniel Marshall, Keppel, Grey: Two years pasture, then pease, fall or spring wheat, then oats, then potatoes and turnips or summer fallow, and seeded down with barley or spring wheat, two years hay.

Alex. Garvie, Derby, Grey: Two years in grass, one pease, one oats, one roots, one wheat or barley.

Mark Hodgson, Egremont, Grey: Hay and pasture two years, pease one year, oats two years, fallow, potatoes and turnips one year, barley and fall wheat.

William P. Rombough, Normanby, Grey: Hay three years, pease, wheat or oats, summer fallow, wheat, seed to grass, pasture.

John Booth, Normanby, Grey: Fallow and green crop, fall wheat and barley and seed down, hay, pasture, pease and oats, fallow and green crop.

George Binnie, Glenelg, Grey: Pease, oats, roots and summer fallow, fall wheat and barley, two years hay, pasture.

W. Totten, Keppel, Grey: Break up out of sod and sow pease or oats, second year barley and spring wheat, third year summer fallow and seed down with fall wheat.

Daniel Wright, Collingwood, Grey: Pease or oats after plowing sod, then wheat, then barley, and seed with grass and clover seed.

George Burrows, Sunnidale, Simcoe: Summer fallow, fall wheat, barley, oats, pease and grain (usually fall wheat.) Of course we do all our own plowing, cultivating, etc. The threshing of wheat, oats and barley is generally done in one day, at say $25 for the machine and all hands employed. Pease cost five cents per bushel and board to thresh. We use no fertilizer except barnyard manure. We never count anything for straw as manure, as it comes and goes all the same each year on the place. We never sell any oats, hay, turnips or corn, as it is used for feed for horses, cows, sheep and hogs. We sell only wheat, barley and very few pease, and the women get the price of the butter and eggs to pay for household supplies. Our place is stumpy and does not work or yield like perfectly cleared land. We have not made the specified rent on it each year, but it must be remembered we have a home and a few good things in the way of flour, butter, meat, etc., for our trouble, which would count a good deal if one had to buy them. Most of the farmers are not making any money just now, and some are falling behind rapidly and must sell or be sold out. While the returns are small, many things are as dear as ever, and men will not work for less than when wheat was $1.25 or $1.30 per bushel, and the great loss is on wheat. Oats, pease and barley are not much sown, but there is a great deal less of these grains raised and sold than of wheat.

John Glaspell, Tiny, Simcoe: Two crops of hay, then pasture, next pease, then barley or oats, summer allow, sow to fall or spring wheat or barley, seed down again.

John Lennox, Innisfil, Simcoe: First year oats, or pease, on sod field; second year barley seeded with clover; third year one field of clover for hay and the other pastured till the middle of June, and kept for clover seed. Have got quit of thistles and all noxious weeds, and will dispense with late summer fallow in the meantime.

James Farney, Flos, Simcoe: Hay, wheat, pease, oats, follow wheat, hay.

Geo. M. Ross, Williams E., Middlesex: After breaking up the sod, pease or oats, then fall wheat after manuring, next seeded with grasses and clover, hay for two years, and then pasture.

Malcolm Campbell, Ekfrid, Middlesex: Pasture, pease, fall wheat, oats, clover and timothy hay two years on clay land, on sandy land pasture two years, summer fallow, fall wheat, clover two years and then pasture.

James Alexander, Ekfrid, Middlesex: Fallow, wheat, hay for two years, pasture, pease, oats. Ten acres in permanent pasture.

John Dixon, Nissouri W., Middlesex: Wheat, oats, pease, potatoes, and corn.

S. C. Tuttle, Oxford E., Oxford: summer fallow, fall wheat and seed down, turnips, then barley, then fall wheat and seed down; pease as a rule on sod, corn, then barley, and seed to timothy and clover. Quite a large piece is devoted to pasture.

W. M. Ryan, Dereham, Oxford: Break sod, sow pease or corn, followed by spring wheat, then barley or oats and seed to clover and timothy.

Wm. Gerrie, Oxford N., Oxford: Summer fallow, fall wheat, hay two years, pasture, pease, spring wheat or barley, hoe crop, oats.

Wm. Colyer, Oxford N., Oxford: Hay pease, wheat, clover, hay, corn, oats, barley, spring wheat hay.

Stephen Hall, Blenheim, Oxford: Timothy and clover, wheat and pease, barley, wheat, clover, oats roots, barley, timothy and clover.

Robert Leake, Oxford E., Oxford: Wheat, hay two years, pease, barley, oats, late fallow, wheat.

F. Malcolm, Blandford, Oxford: Hay, pasture, pease, roots, oats, barley, hay.

James Anderson, Zorra E., Oxford: Clover and grain, pease or fall wheat, oats, roots or fallow, barley or spring wheat, clover and grass three years; I always plow in second crop of clover when breaking up.

Henry Key, Oakland, Brant: Clover, hoed crop, barley or oats, clover two years, wheat or pease, oats clover.

Frederick Axon, Onondaga, Brant: Summer fallow, wheat seeded down to grass, hay or pasture, two or three years, plowed for oats, pease or barley two or three years. I sometimes plow sod after hay is cut, cultivate hay and sow wheat.

Thos. A. Good, Brantford, Brant: Hay, pasture, pease, oats or fallow; wheat or barley; roots or fallow; barley. I cannot follow this always, as grass seeds often fail. I try to keep the land in good heart.

Wm. Lochhead, Elma, Perth: Pease, fall wheat, oats, roots, barley, hay, pasture. Farmers depend more on milk for cheese than on any cereal crop.

John Campbell, Blanshard, Perth: I have no regular rotation, but never sow over two grain crops without manuring and seeding down to clover and timothy.

Alexander Martin, Downie, Perth: Summer fallow, fall wheat, hay two years, pasture one year, roots and pease, barley, oats, summer fallow, wheat and seed down for hay.

Robt. Forrest, Elma, Perth: Grass, pease, wheat, roots, grain, hay.

Thos. Page, Wallace, Perth: Fall wheat from previous summer fallow, followed by oats or pease; barley partly on summer fallow and potato ground, and sometimes on timothy sod plowed up.

George Leversage, Fullarton, Perth: Summer fallow, fall wheat, barley, seed down, turnips, barley, oats, pease.

Alex. McLaren, Hibbert, Perth: Summer fallow for fall wheat, oats after wheat, manure oat stubble for green crop, barley and seed down.

D. McLean, Ellice, Perth: Oats, hay, pasture, pease and roots, spring wheat and barley seeded out. (With the failure of the spring wheat and the prevalence of the white grub I summer fallow.) Fall wheat; pease, roots, and barley; oats; hay, pasture, seeding out with the oats. I never sell my straw, but turn it into manure. I charge about one-third of the manure against the crop upon which it is put. The grain crop of 1887 will not pay current expenses, let alone rent, but in former years it was worth about $4 an acre for the improved lands.

Duncan Stewart, Easthope N., Perth: Break up sod in spring or fall for oats and pease; then fall wheat; next roots or grain and seed down again; then one crop hay and one crop pasture, or three or four years' grain and roots and two years' pasture. I have no summer fallow, as I am convinced that clover and roots will keep land as clean as summer fallow, and that all land should yield a crop every year. The only drawback I find to it is in getting in the fall wheat in time.

Charles Nicklin, Pilkington, Wellington: Fall wheat, two of oats, pease, fallow and turnips to be seeded to next crop with grass; or seed to fall wheat and sow three times without pasturing at all.

Wm. Segsworth, Luther W., Wellington: Pease on sod, oats, roots, oats and seed to clover and grass if the land is clean; if not summer fallow and sow fall wheat and seed down to grass.

Robt. Cromar, Pilkington, Wellington: Pease, fall wheat, oats, green crop, barley, hay two years pasture.

Henry Smith, Erin, Wellington: Fall wheat on fallow, spring wheat, barley and seed down; break up for pease, then fall wheat, oats, roots, barley and seed down.

James Cross, Peel, Wellington: Pease on sod, wheat or barley, oats, then oats again or summer fallow, then fall wheat or spring wheat and seed down.

John McDonald, Garafraxa W., Wellington: Summer fallow or root crop, next barley, then seeded with clover and timothy. When broken from sod I generally sow pease, sometimes oats, then barley, then fallow or roots.

Thomas Mitchell, Dumfries N., Waterloo: On account of missing catch of clover, our rotation of crop is very often completely upset, as was the case last year.

Edward Halter, Waterloo, Waterloo: Summer fallow, fall wheat, turnips, oats or barley since spring wheat is bad, sowing in clover and timothy for hay, and plowing up inside of four years, followed by pease.

James Reith, Luther E., Dufferin: Pease, oats, roots or summer fallow, barley, hay, pasture; sometimes two crops of hay before pasturing.

George Bailey, Melancthon, Dufferin: Wheat, barley, oats, roots, barley and seed down.

Robert Gray, Mulmur, Dufferin: Pease on sod, wheat, barley, oats, fallow and seed, or turnips and potatoes.

Adam Spears, Caistor, Lincoln: Fallow, wheat, three years in grass, pease, barley, or oats, fallow. In general the crops did not pay the labor, by reason of the excessive drouth.

John Jackson, Caistor, Lincoln: Fallow, wheat, four years in grass, spring grain. The profit comes from the land in grass.

John H. Lindebury, Clinton, Lincoln: Oats, pease or barley, then fallow.

James R. R. Secord, Grantham, Lincoln: Commence with oats on sod, follow with fall wheat, then barley and seed down to hay for two years.

W. H. Van Duzer, Grimsby N., Lincoln: Hay two years, pease or oats, barley or spring wheat and seed down again. Perhaps corn between oats and barley.

E. D. Smith, Saltfleet, Wentworth: Fall wheat, two years clover, corn, oats two years, summer fallow with manure and rape plowed down.

Robt. Inksetter, Beverley, Wentworth: First year, wheat after fallow, and pease and barley; two years on meadow and pasture; fourth year spring crops and next year fallow and root crops. But it is impossible to carry out a regular system, on account of winter killing and drouth.

T. A. Walker, Ancaster, Wentworth: Wheat, hay or potatoes, barley, wheat, hay.

Erland Lee, Saltfleet, Wentworth: Fallow, then meadow or pasture, then corn or oats or other spring grain.

John Weylie, Sr., Glanford, Wentworth: Generally fall wheat or pease on clover sod, barley and root crop following oats on timothy sod. I generally summer fallow a field.

Wm. McDonald, Esquesing, Halton: Fall wheat, followed by oats or barley and clover and timothy; if not seeded down followed by pease. In breaking up sod sow pease on it, and next season summer fallow it for fall wheat to kill wire grass, which is the worst pest in this section.

Henry Robinson, Trafalgar, Halton: A large proportion of the farm is under grass. When I plow the first crops pease or oats, next year oats or barley, then summer fallow, sow with fall wheat, seed down with clover and timothy, and leave it as long as it will produce grass to pay.

Colin Cameron, Nassagaweya, Halton: Break up sod and summer fallow for wheat, then pease on part and oats on the rest; then potatoes and turnips on oat land and oats on pea land; then barley on potato and turnip land and seed down, and on the following year put turnips and potatoes where oats were, and seed down. I also summer fallow for barley.

W. F. W. Fisher, Nelson, Halton: Corn or roots, barley, wheat, hay or pasture, three years oats or pease.

F. J. Sleightholm, Toronto Gore, Peel: Fallow and roots, fall wheat (seeded), hay, pasture, pease fall wheat, barley, oats.

Smith Bros., Chinguacousy, Peel: Wheat, wheat and barley, oats, fallow.

Wm. Kersey, Toronto Gore Peel: Summer fallow, wheat, hay, hay or pasture, pease and barley, wheat or barley, oats, barley—eight years course.

James Newlove, Albion, Peel: Wheat, hay for two years, pasture one year, pease, barley, oats, then fallow again.

John Campbell, Chinguacousy, Peel: Fallow with wheat, then clover two years, oats and pease, barley or spring wheat.

A. J. Hughes, Gwillimbury E., York: Hay, oats, summer fallow, barley, spring wheat, and seed down, but I frequently change order owing to circumstances.

Simpson Rennie, Scarboro', York: After sod pease, wheat, oats, roots, barley, grass two years, pasture.

D. James, Markham, York: Fallow, fall wheat, barley, clover hay, timothy hay two years, pease, oats or spring wheat.

F. C. Sibbald, Georgina, York: On sod, pease or oats, followed by fall wheat, if second crop of wheat seeded down with timothy; if seeded down with oats mixed clover and timothy. At present I am trying to get as much as possible of the farm into meadow, as raising shorthorns, horses and pigs is my object, grain for market not found to be profitable. Very few roots grown as yet, but as the animals have not thriven as well as expected on bran and shorts, I shall try again with more roots.

A. Forster, Markham, York: Roots and fallow part, spring wheat or barley and seed down, clover and timothy hay (pasture or clover seed after), timothy hay, pease, barley, (scatter salt in spring and manure in fall), fall wheat and seed down, pasture and clover seed, timothy hay, oats, (plow fall before.)

Robert C. Brandon, Brock, Ontario: Pease, wheat, oats, fallow, barley and seeded down.

Alex. McGregor, Reach, Ontario: Sod, wheat, turnips, pease, seed to alsike, barley and seed to red clover and timothy.

Jas. H. Birchard, Scott, Ontario: Hay, roots, oats or wheat, and seed down. I never have a dead summer fallow; it does not pay.

R. S. Webster, Scott, Ontario: Meadow clover and timothy, followed by pease or oats, wheat, barley, oats, roots, turnips and potatoes, etc., barley or spring wheat and seeded.

James Parr, Cartwright, Durham: I mow two years, then plow twice and sow barley, next spring wheat, then oats, then pease, potatoes, turnips and corn, manuring the same; then barley or spring wheat and seed with timothy and clover.

R. Osborne, Clarke, Durham: Pease on sod, barley or wheat, oats and seed for hay or roots, barley or wheat and seed for hay or pasture. It takes about sixteen loads of manure to cover one acre, but we scatter it over the farm in different places where we think it is most needed. We average about 200 loads of barnyard manure a year and about 80 bags of salt. We use no other artificial manure.

James Brock, Cavan, Durham: Pease or oats, wheat, barley (seeds), hay or pasture for two years, pasture and then pease again.

J. W. Caldwell, Hope, Durham: Pease on sod, wheat or barley, oats, hoe crop or wheat, barley and seed down.

H. A. Walker, sr., Hope, Durham: Crop of hay, pease, wheat, barley, wheat and then seed down. On low land oats are sown for two or three crops and seed down, hoe crop, pasture.

S. Hinman, Cramahe, Northumberland: Pease, wheat, barley; sometimes corn first.

Walter Riddle, Hamilton, Northumberland: Pease wheat or barley, oats, planting and summer fallow, wheat or barley and seed down, clover, hay, pasture.

Platt Hinman, Haldimand, Northumberland: Oats or meadow; planting and pease with all the green manure, then barley the whole piece or sometimes seed for meadow; then wheat and oats; if seeding fails the first or second year, plow and put in pease or oats. I have rough land for permanent pasture; also one piece seeded with Prof. Brown's mixture, which gives abundant pasture.

Samuel N. Smith, Sophiasburg, Prince Edward: From meadow pease, wheat and barley, seed with clover and after two years sow again with barley. The land is manured from the barnyard after the barley is taken off with the best results.

W. R. Leavens, Hallowell, Prince Edward: Corn, barley two years wheat and hay.

Louis P. Hubbs, Hillier, Prince Edward: On plowing up sod I first sow pease, then barley or wheat; then plant or put in oats. On the part I plant I sow barley again and seed at the same time, mowing and pasturing three years but where I sow oats I fallow, then barley.

J. B. Aylesworth, Camden E., Lennox and Addington: I keep the farm mostly in meadow and pasture. I take two or three crops off and then seed down with clover and timothy.

W. R. Gordanier, Ernesttown, Lennox and Addington: Hay, barley and oats, planted after being manured, barley or seed with clover and timothy.

George Lott, Richmond, Lennox: Oats or pease, barley, seed down say three years, then break up or cut one year's crop of hay, pasture two years and then break up.

R. J. Spoor, Wolfe Island, Frontenac: Pease on sod, barley second sod; if the land is poor I seed down the second year, but if good sow oats, then seed with timothy and alsike clover.

Joshua Knight, Storrington, Frontenac: Three years meadow or pasture, pease or oats on sod, hoed crop and summer fallow. Seed down with wheat or barley.

A. Knight, Kingston, Frontenac: Pease or oats, hoed crop, or wheat, or barley with grass seed, then barley. I always make hay follow two grain crops.

James Murton, Portland, Frontenac: Pease or sod turned down, then wheat or barley, then oats and manure and seed down.

John C. Stafford, Lansdowne, Leeds and Grenville: Hay, oats, wheat or barley. I usually plant on sod.

Isaiah Wright, Augusta, Leeds and Grenville: Summer fallow to fall wheat and stock down to grass, mow two years and pasture or plow up and sow to oats or pease. Then sow barley or plant corn or potatoes. Sometimes sow barley or spring wheat and stock down to grass.

J. A. Russell, Bastard, Leeds and Grenville: Fall wheat, hay and clover, spring wheat, oats, pease, corn, potatoes and turnips.

S. Edgar, Kitley, Leeds and Grenville: Hoed crops, wheat, hay and clover three years, oats two years.

H. C. Lynch, Escott Front, Leeds and Grenville: I cut meadow from seeding from three to four seasons; I plow twice and then seed to timothy.

James Collison, Matilda, Dundas: I plow sod, sow to grain or plant corn, wheat, barley or oats and seed down.

Donald F. McRae, Roxborough, Stormont: Wheat or barley on last year's manuring with grass seed, two years hay, two years pasture, then pease or oats.

Kenneth McLennan, Lochiel, Glengarry: Sod, plow for pease or wheat, wheat or potatoes, oats and seed with clover and timothy, one or two years in hay, and then pasture for two or three years.

James Cattanach, Lancaster, Glengarry: No rotation is strictly followed by me. Grain growing did not pay those who had to sell during the past two years, but those who fed it to stock did better. We sell very little any year.

Alfred Hill, Cumberland, Russell: Oats for two years, potatoes or other roots, oats and seed down with timothy and clover.

Peter Bolton, Russell, Russell: Summer fallow for fall wheat, seed with timothy, three spring crops and seed with timothy.

Isaac Wilson, March, Carleton: First year pease, then oats, pease, oats and seed down with timothy and clover.

Ralph Lett, Wilberforce, Renfrew: First crop wheat; second crop oats; manure, sow oats and seed down with clover and timothy, mow three or four years as it will suit, and break up again.

F. Kosmack, Admaston, Renfrew: First year peas-, second oats, third year two-thirds oats and pease and one-third oats and vetches mixed, fourth and fifth years clover and timothy. I am giving up sowing wheat altogether.

Andrew Wilson, Ramsay, Lanark: Pease, wheat, oats, hoed crop, wheat and sow down.

R. Harper, Elmsley N., Lanark: Oats generally after lea, manured and followed by wheat, then green crops or fallow, manured and seeded to timothy and clover, red alsike and white chiefly; meadow two years or more, and then pasture for a time.

John Campbell, jr., Mariposa, Victoria: First year roots, next wheat or barley, then grass for two years, followed by oats and pease.

John Stewart, Verulam, Victoria: Summer fallow, fall wheat, oats, spring wheat, timothy and clover, pasture.

A. L. Minthorne, Mariposa, Victoria: Fall wheat, alsike, barley, pease, oats, summer fallow.

John Lang, Otonabee, Peterborough: Wheat, peas, oats, barley, seed down.

A. R. Kidd, Dummer, Peterborough: Clover, pease, barley or roots, wheat or barley, and seed down.

D. Kennedy, Otonabee, Peterborough: Clover, sod, barley or wheat, oats, pease, roots, barley, grass.

F. Birdsall, Asphodel, Peterborough: Pease, fall wheat, pease, fall wheat, seed down to clover and timothy, part pasture for fields far from the barn. For others sod broken up for pease, fall wheat, roots or oats, barley, seed down pasture. Regarding fall wheat for 1887, mine was nearly all killed out, which was the first time it happened in thirty years; but as a quantity of it was seeded down I did not plow up any, and had to charge for plowing and cutting the whole ground. For twenty years it has averaged over twenty-three bushels to the acre. When threshing pease I always cut up the straw with the cutting-box which threshes them.

Stephen Kettle, Glamorgan, Haliburton: As my farm is a new one, I naturally begin with a clearing, or, as it is called, a bush fallow, on which I have always, except in one instance, put turnips or potatoes. Then spring wheat, next pease, then oats. After this, as my land contains many surface stones, I thoroughly clear the stubble, then plow and pick again, and then, if in the fall, I sow rye, and after harrowing in I pick every stone again, and in spring sow clover seed on this. I take off all the clover I can get the first season, well manuring in the fall, for as a rule the barnyard manure does more good here in the second year than it does in the first. The second year of the clover I take off the first cut and then break up, plowing in the aftergrowth when it is as heavy as I can turn it under. Then comes fall wheat; and as a rule I have good crops (for the soil) from this plan. My mode is to grow alternately a green crop, clover, pease, potatoes, turnips, mangels, tares, with a straw crop, wheat, barley, oats, rye, etc.

W. C. Melville, Stanhope, Haliburton: Oats, pease, wheat, seed down with clover and timothy; cut for two years and then break up.

J. C. Hanley, Tyendinaga, Hastings: Manure put on ground for corn, potatoes and roots followed by wheat or barley and seeded; about two years in meadow and two in pasture. When broken up the first crop is generally one of pease and oats mixed.

George Monro, Tyendinaga, Hastings: Pease, wheat, barley, oats, is the usual rotation.

Moses Davis, Morrison, Muskoka: Potatoes, wheat, oats, pease.

James McDonald, Stephenson, Muskoka: Oats after breaking, roots, potatoes and turnips next, then seed down with oats or barley, hay, pasture.

A. Wiancko, Morrison, Muskoka: Manure, wheat, oats, grass, manure, pease, oats, grass, manure, potatoes, barley, grass. I manure stump free land once in three years. Ashes on grass lands. I keep a small field of one acre for beets, mangels, carrots, a few turnips, etc., near the building in a high state of cultivation, and manure every year.

Albert H. Smith, Monck, Muskoka: Sod, pease, wheat, oats, manure, oats or millet grass three years, pasture two.

Wm. Jenkin, Perry, Parry Sound: Plow sod in the fall, sow pease first year, then wheat or barley, sometimes potatoes, then oats and seed down. I clear a piece of land every year for turnips. Potatoes follow sometimes, and if not oats and seed down; pasture two years before breaking up. I never sell any hay or straw and but very little grain; I consume almost everything on the farm. Dairy and stock pays better than grain. The stock run in the woods all the summer.

FARM LABOR AND WAGES.

The supply of farm labor during 1887 is reported to have generally been sufficient for all demands. This is due not probably so much to any increase in the number of hands available for farm work as to the greater use of improved machinery in the various perations of the farm. Other circumstances, too, lightened the labor. The operations, of both haying and harvesting, which are usually the most hurried seasons of the year

did not involve nearly as much labor as in ordinary years, from the fact that the crops were lighter than usual, and were consequently more quickly handled, while the unbroken season of good weather permitted of the work being pushed forward with the minimum of interruption and delay. It is true that the great heat hastened ripening to such an extent as to bring on the harvest in all kinds of grain almost at the same time, and in many cases before the hay crop was all out of the way, with the consequence that the pressure of work was great for a time ; but the hurried season was unusually short, and everything was secured without loss from over-ripening. With the help of the labor-saving machinery that is now at the command of the farmer, results are attainable which were formerly impossible. The farmer of to-day, with his self-binder and other harvesting implements, and with his fields smooth and clear of obstructions, is comparatively independent of manual help, and, unless in case of accident or other unforseen circumstance, is rarely overtaken by the ripening crop where he has an ordinary area to attend to. Not only is the grain now reaped and bound by machinery, but most of the binders are provided with a carrying attachment which deposits the sheaves in rows ready to be set up in shocks, thus making a further saving of the labor of at least one man. It is not merely in the economy in cost of labor that the advantage lies in having improved machinery. A greater saving is often made by being enabled to secure the crop promptly before it is injured by weather or over-ripening. Several correspondents state that they would not have been able to get through with the harvest this year without great loss if it had not been for the help of the self-binder, on account of the extreme heat, which rendered prolonged exertion in the sun exceedingly dangerous and at times almost impossible. The number of binders coming into use is yearly increasing. Many correspondents speak in despondent terms of the small crops and poor markets of the past two or three years, and state that this condition of affairs renders it imperative for the average farmer to dispense with hired help on the farm as much as possible and confine the work to himself and his family. The general tenor of the remarks as to the prospect of a rise or fall in the rate of wages indicates that there is no likelihood of a rise in wages, nor is there any probability of any considerable fall in the rate unless the markets drop still further and the poor yields of the past few years become the standard.

FARM LABORERS' WAGES.—The following table presents a summary, by county groups and for the province, of the average wages of farm laborers and domestic servants in Ontario for the present year and for the six years 1882-7, together with the average wages for the province in 1886 :

Districts.	Farm laborers.								Domestic servants with board.	
	Per year.				Per month.					
	With board.		Without board.		With board.		Without board.		Per month.	Per week.
	1887	1882-7	1887	1882-7	1887	1882-7	1887	1882-7	1887	1882-6
	$	$	$	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lake Erie	154	161	241	249	16 72	17 73	25 64	26 68	6 02	1 49
Lake Huron	159	165	255	259	17 19	18 27	27 00	27 85	5 88	1 49
Georgian Bay	155	161	254	256	16 95	18 23	26 17	27 80	5 82	1 44
West Midland	159	163	251	253	16 82	17 95	25 92	27 07	6 17	1 54
Lake Ontario	162	165	253	253	16 79	17 84	25 81	26 99	6 30	1 56
St. Lawrence & Ott.	158	165	249	252	16 98	18 39	25 52	27 15	6 00	1 52
East Midland	161	167	256	257	16 63	18 13	26 81	27 43	5 73	1 52
Northern districts	173	175	262	276	18 31	19 81	27 10	29 82	6 05	1 49
The Province.. 1887	159	164	250	254	16 91	18 02	26 04	27 37	6 05	1 52
The Province.. 1886	158	.....	251	.....	17 06	.....	26 64	.....	.....	1 52

There is a marked falling off in the rate of wages paid to laborers in 1887 from the average for the last six years, and there is, on the whole, a slight reduction from the figures for 1886. The average wages paid in the case of yearly engagements, with board, is $159 per annum for the present year, and in monthly engagements, which apply principally to the summer months, the rate of $16.91 per month with board is paid. During the harvest wages generally ran at from $1 to $1.25 per day, or $20 by the month, for short terms. For engagements covering six months of the summer about $16 per month was the usual rate for a laborer of average ability and experience. The highest rates are paid in the Northern districts, probably owing to the fact that these localities are nearer than others to the lumber region and to railways in process of construction, where the demand for labor is greater.

Although the introduction of improved machinery and the dulness in lumbering operations and in the construction of public works have resulted in reducing the cost of labor in farm management, there is as yet no solution of the domestic servant problem on the farm. Correspondents complain that servant girls are scarce and cannot be induced to remain owing to the greater attractions that are offered them in cities and towns. Many of the remarks are far from complimentary to the girls; but these latter might be able to give evidence which would tend to throw more light on this question of the general scarcity of female help in the Canadian farm house. A chapter on Canadian farm life written by the farmer's wife, daughter or hired girl might possibly show why many of the last named prefer the town or city to the toiling and moiling of the rural kitchen, the dairy and the barnyard. Immigrant girls that are brought out to the farms soon find their way to the towns as a rule, and refuse service in the country. The average monthly rate of wages for the province to servant girls for 1887 is $6.05, and the average weekly rate for the five years 1882-6 is $1.52.

FROM THE MAY REPORT.

John Hooker, Mersea, Essex: There is an adequate supply of farm laborers. Wages are from $14 to $18 per month, with board, and $1 per day, without board.

Thos. Scane, Howard, Kent: There is a sufficient supply of laborers. Wages are from $12 to $16 per month, with board, or $18 to $22, without board.

J. Robinson, Southwold, Elgin: The supply of laborers is equal to the demand. Wages, with board, $17, without board, $20 to $24.

O. E. Twiss, Middleton, Norfolk: The supply of farm laborers is equal to the demand, at $12 to $15 per month, with board, but girls are hard to get at any price.

V. Honsberger, South Cayuga, Haldimand: There is a sufficient supply of farm laborers. Wages from $14 to $18 per month, with board, and from $20 to $24, without board.

John Misener, Wainfleet, Welland: The supply of help is equal to demand. Wages are, with board, $17 per month; without board, $25 or $26.

Wm. S. Howell, Sombra, Lambton: Farm laborers are none too plentiful, most young men having gone away - some sailing, some to Michigan, and some to our own lumber woods. Boys get from $5 to $16, men $15 to $20 a month with board; and boys 40 cents to 75 cents, men 75 cents to $1 a day without board.

Robt. Rae, Bosanquet, Lambton: The supply of labor is quite sufficient. Average rate of wages, with board, $16; without board, from $20 to $24. The above figures are for summer months.

S. Hogarth, Stephen, Huron: There are plenty of laborers to be hired. Men get $15 per month with board, while boys are employed at about $10 and board.

John Anderson, Wawanosh E., Huron: Laborers are abundant. Wages are $18 for the summer months, with board, and about $1.25 per day, without board.

John Douglass, Arran, Bruce: Farm laborers are plentiful, as the demand has greatly fallen off owing to the very low prices obtained last year by farmers for their produce. Wages by the year, with board, average about $155; by the month, for this summer, $16 with board.

L. Lamb, Greenock, Bruce: I have heard no complaint of scarcity of laborers in this locality. Wages average from $14 to $17 per month, with board.

Alex. Garvie, Derby, Grey: Owing to the low prices obtained for farm produce, and the use of labor-saving machinery, farmers here do with very little help and many young men are moving away. Wages with board, $17; without board, $25 per month for summer season.

Alex. Pringle, Sullivan, Grey: Help is rather scarce, especially good farm girls. Wages about $14 for men, and about $4 to $8 for girls.

A. Bell, Nottawasaga, Simcoe: I have heard no complaints with regard to the scarcity of farm laborers. Average rate of wages per month, with board, $18, and without board, $25.

John Glaspell, Tiny, Simcoe: Men are rather scarce. Wages, with board, $17 per month; without board, $24 per month.

James Gilmour, Dorchester N., Middlesex: There are plenty of men, but girls are rather scarce. Men earn $150 to $180 per year, or from $14 to $17 per month, with board; girls from $5 to $7.

W. Black, Westminster, Middlesex: There is a sufficient supply of farm laborers at $14 to $18 per month for the summer, with board, and $1 per day, without board.

N. Smith, Oxford W., Oxford: Help is scarce, many of the young men having gone to Dakota. Wages $17 to $20 per month, with board.

J. Anderson, East Zorra, Oxford: There is a sufficient supply of laborers. Wages $13 to $17 per month, with board; $20 to $25 without.

Thomas Lunn, Oakland, Brant: Wages by the year $14 per month, with board; $22 without board. The six months' system is largely in vogue here, with wages at $16 per month, for the six summer months. Farm laborers are plentiful.

D. McLean, Ellice, Perth: Young men are in fair supply at from $10 to $16 per month, with board. Girls who are willing to make themselves useful can get $7 per month, with board, and are scarce at that.

Wm. Whitelaw, Guelph, Wellington: Supply of farm laborers about equal to the demand. $18 per month is about the average rate for eight months for good hands, with board; without, $24 or $25, and from $170 to $185 per year, with board.

H. McDougall, Guelph, Wellington: Male laborers can be procured at reasonable rates, but girls cannot be got at all.

Andrew Henry, Mono, Dufferin: There is a fair supply of laborers. Wages average about $14 with board for the whole year, and for six or seven months from $17 to $20.

D. B. Rittenhouse, Louth, Lincoln: The supply of farm labor about equal to the demand. Wages from $15 to $18 per month. Servant girls are very scarce; wages from $6 to $7 per month.

Thos. Shaw, Binbrook, Wentworth: There is a better supply than usual of workingmen. Wages, with board, $14, and without board $19, and some perquisites for families.

J. Bremner, Flamboro' E., Wentworth: Farm laborers can commonly be obtained, but owing to the number of labor-saving machines in use young men are forced to go into other and newer settlements. $16 to $18 per month, with board; $25, $26, etc., without board.

Colin Cameron, Nassagaweya, Halton: There is no scarcity of farm hands, but wages keep very high, averaging about $19 per month, with board, for seven months, and about $200 per year.

D. H. Garbutt, Chinguacousy, Peel: There is a good supply of farm laborers, but no girls are to be had. Wages range from $17 to $20 per month for seven to nine months, with board, and from $25 to $27 without, and from $160 to $200, with board, per year.

Wm. Porter, Toronto Gore, Peel: The labor supply is just about sufficient. Wages average about $18 per month for seven or eight months, or $160 per year, with board, with an increase of from $6 to $8 per month, generally in perquisites, without board.

C. E. Lundy, East Gwillimbury, York: Plenty of farm help, but female domestics are very scarce. Wages, $16 per month, with board, or $23 to $25 without.

D. B. Nighswander, Markham, York: Not very plentiful; there is work for all of them. Wages from $16 to $18, and board, for from seven to eight months in the year; men by the year getting all the way from $150 to $200, and board.

Hy. Glendinning, Brock, Ontario: The supply of laborers is about equal to the demand, but farmers would employ more if they could get good, steady men at reasonable wages. Wages, with board, from $15 to $19 per month, for a term of about eight months.

Robert Colville, Clarke, Durham: There is a good supply of laborers at present. Wages per month from $12 to $16, with board.

Wm. James Grandy, Manvers, Durham: Help is somewhat scarcer than last year, but the supply is sufficient. From $16 to $18 per month, with board; I do not know of any hired without board. I suppose it would be about $10 per month more.

Smith Hinman, Cramahe, Northumberland: Laborers are plentiful enough, but everything is so low that farmers hire as little help as possible; wages $13 to $16 per month and board.

Charles Stirton, Monaghan S., Northumberland: The supply of labor is equal to demand. Wages a little lower this year; about $18 per month, with board.

Luther Platt, Athol, Prince Edward: There seems to be a full supply of farm laborers at present. The increased use of machinery, together with the small profits farmers have made of late, has lessened the demand.

R. J. Dunlap, Pittsburg, Frontenac: Good farm laborers are scarce, and those that farmers have to take are often very unsatisfactory, as they, in many cases, know but little about the work that they engage to do. Wages average from $10 to $14 per month, with board, and for day laborers, from $1 to $1.25 a day, without board.

A. F. Bond, Storrington, Frontenac: Farm hands are scarce, at from $14 to $17 per month, with board. Female servants can scarcely be obtained at any price.

Andrew Gray, Crosby S., Leeds and Grenville: There is a fair supply of laborers here. Wages, $18 per month, with board, and $1 per diem, without board.

John Conn, Oxford, Leeds and Grenville: There is a scarcity of labor about here. We pay about $20 per month, with board, $1.25 per day, without board.

Jas. Collison, Matilda, Dundas: There is a good supply of farm laborers, but a great scarcity of domestic servants. A good man is worth $20 per month, with board, but about $15 is the average pay, or $1 per day and board themselves.

G. I. Morgan, Osnabruck, Stormont: There is not a sufficient supply of either male or female labor. About $18 per month the year round is paid for good farm hands, they boarding themselves, and $6 per month for female help, with board and lodging.

Jas. Clark, Kenyon, Glengarry: The supply of labor is sufficient for the demand. Wages average from $18 to $20 per month and board.

Paul Labrosse, Hawkesbury E., Prescott: The labor supply here is sufficient. Wages $18 per month, with board, and $26, without board.

J. Grierson, Torbolton, Carleton: Farm laborers are scarce. Men are paid from $18 to $20 per month, with board.

James E. Craig, North Gower, Carleton: There is a sufficient supply of laborers at from $15 to $18 per month, for six or seven months, with board.

Robt. McLaren, Horton, Renfrew: The supply seems equal to the demand. Wages about $15, with board, and $1 to $1.25 per day, without board; farm laborers are generally boarded.

H. A. Mitchell, Pembroke, Renfrew: Farm laborers are not too plentiful here, but this is on account of the lumber trade absorbing the labor to the disadvantage of the farmer. Wages average all the way from $32 down to $14, with board.

E. Chalmers, Montague, Lanark: There is a sufficient supply of laborers. Wages average $20 per month, with board.

John F. Cummings, Mariposa, Victoria: We have an abundance of farm laborers here. Wages range from $14 to $16 per month, with board.

John A. Jackson, Eldon, Victoria: There is a fair supply of labor. Wages are quite as high as usual; from $16 to $18 per month, with board, for the summer season.

F. Birdsall, Asphodel, Peterboro': The farmers are trying to do their own work, hiring as little help as possible on account of the high wages and low prices of grain. Wages $26 per month, without board, and $17 to $20 with board.

John Garbutt, Smith, Peterboro': There is a sufficient supply of laborers at from $17 to $18 per month, with board.

W. C. Melville, Stanhope, Haliburton: There is a good supply of help here: farmers pay from $15 to $16 per month, with board.

D. Kavanagh, Dungannon and Faraday, Hastings: There is a good demand for laborers here, owing to the lumbermen having engaged large numbers of men to go river-driving, at from $20 to $25 per month and board. Farm hands get from $15 to $20 per month, and board.

W. A. Adams, Hungerford, Hastings: There is a sufficient supply of laborers hereabouts. Hired men in this township, almost without exception, board with their employers. The average rate of wages, with board, is about $16, for the summer.

C. Robertson, Cardwell, Muskoka: Farm laborers are scarce. Wages $14 to $16 per month, with board, and without board, $1 per day.

Donald Gordon, Chapman, Parry Sound; The supply of labor is adequate; wages is $18 to $20 per month, with board.

J. M. Ansley, McDougall, Parry Sound: Laborers are scarce and wages high, lumbermen paying from $26 to $30 per month, with board, so absorbing most of labor supply.

J. H. Johnston, Sandfield, Algoma: There is a sufficient supply of labor. Men are paid $20, with board, $28, without board.

FROM THE AUGUST REPORT.

E. Nash, Mersea, Essex: The labor supply was about equal to the demand.

T. F. Kane, Maidstone, Essex: Plenty of help at from $1 to $1.50 per day and board. About one-fourth of the farmers have self-binders.

L. E. Vogler, Zone, Kent: Labor supply plentiful, with wages at about $1 per day in harvest. Self-binders are in general use.

E. B. Harrison, Howard, Kent: Self-binders are largely used, but the labor supply was scarcely sufficient. About $1.25 per day was paid, with board.

A. Coatsworth, Romney, Kent: Labor was scarce. Self-binders were the only relief we had. Wages were about $1.25 per day, or $26 per month with board.

D. Campbell, Dunwich, Elgin. The labor supply was ample. About 30 per cent. of the farmers have self-binders. Wages in haying were about $1.25, and in harvest $1.50 per day.

D. McKillop, Aldboro', Elgin: Plentiful supply of labor. More self-binders bought this year than usual. Wages about $18 per month for six or seven months, and $1 to $1.26 per day and board.

John Ostrander, Middleton, Norfolk: There was plenty of help in haying and harvesting at $1 to $1.25 per day.

A. Simenton, Seneca, Haldimand: No scarcity of labor. Self-binders in general use. Not any day labor required.

C. Riselay, Bertie, Welland: Labor supply not equal to the demand. Wages are about the same as in former years.

John McFarlane, Sarnia, Lambton: The supply of labor, owing to the rush of work, was insufficient.

D. S. Robertson, Plympton, Lambton: The labor supply was scarce, but compensated by the number of self-binders in use. The prevailing rate of wages here was about $1 per day.

C. Prouty, Stephen, Huron: Almost every farm has a self-binder, and there is very little hired help in this locality.

W. Hick, Goderich, Huron: Labor was rather scarce in the push of harvest. Self-binders are getting much in use. Could not do without them now.

Peter Reid, Kinloss, Bruce: Labor has been in good supply, owing to the use of self-binders. Wages, per day, $1.25; per month, about $24.

George Buskin, Artemesia, Grey: The labor supply was sufficient. Wages, per day, about $1.25; per month, $25 for a short time.

B. R. Rowe, Orillia, Simcoe: Labor rather scarce, caused chiefly by everthing being rather prematurely ripened by the dry, hot weather, and all coming in together.

Thomas Beckton, Ekfrid, Middlesex: There is plenty of help in harvest, but women have rather too much to do, not from any scarcity of females in this part, but from a seeming dislike to work out.

John F. Tribe, Dereham, Oxford: The supply in haying and harvest was ample. Wages $1 to $1.25. Every farmer has a mower and a self-binder, and most of them can do all their own work.

Fred. Axon, Onondaga, Brant: Labor supply is plenty, on account of binders coming into use. Wages $1.25 per day.

James Cross, Peel, Wellington: Wages $1.25 per day and board. Self-binders are used here generally. Could not do without them.

Robert Gray, Mulmur, Dufferin: Labor supply was sufficient here. Wages $1 per day, and $16 to $20 per month, according to length of time.

Edward Irvine, Grimsby S., Lincoln: Owing to the number of self-binders being used there seemed to be plenty of help. The dry weather gave farmers a chance to get through with their harvesting easily.

Jno. Blasdell, Beverley, Wentworth: The labor supply was sufficient. Salf-binders are used by almost all farmers. Wages in haying $1 and in harvesting $1.50 per day; by the month, $26 and board.

John Husband, Trafalgar, Halton: No lack of harvest help, as fewer men are required than formerly, owing to the use of self-binders.

W. H. Proctor, King, York: Labor hardly sufficient. Wages from $1.25 to $1.50 per day, and from $25 to $30 per month.

James Brock, Cavan, Durham: Plenty of men; wages about $16 per month.

J. Dunn, Brighton, Northumberland: There was plenty of help to be had in hay and harvest. Self-binders are becoming more plentiful as they become lower in price. Rate of wages by the day $1, by the month, $17 to $18.

E. Roblin, Ameliasburg, Prince Edward: There was plenty of labor in this neighborhood. Some half-dozen self-binders were in use this season; they gave good satisfaction. Wages, $15 to $25 per month.

Jas. Lane, Denbigh, Lennox and Addington: Labor was quite scarce. There are no self-binders and few reapers used here. The general rate of wages was, in haying, 80 cents per day, in harvest, $1, or $20 per month, with board in all cases.

Robt. Cook, Bedford, Frontenac: There is plenty of help. Nearly everyone has labour-saving implements. Wages, $18 to $25, with board.

J. A. Russell, Bastard, Leeds and Grenville: Labor was plentiful. A good many self-binders are used. Wages from $1.25 to $1.50 per day, and from $18 to $26 per month.

John Ferguson, Wolford, Leeds and Grenville: Labor was very scarce, particularly in haying. Men were asking $1.50 per day.

D. Rae, Winchester, Dundas: Labor seems to be plentiful enough. Hay loaders are coming into use. A good many binders are used now, but not to the extent they should be. Wages, $1 per day, $16 per month, with board.

H. F. McDermid, Cornwall, Stormont: The labor supply is equal to the demand. There are not many self-binders in use. Wages from $16 to $20 per month, or $1 per day, with board.

R. Bowden, Cumberland, Russell: Labor is plentiful. Self-binders and labor-saving implements are used by every farmer. Wages by the day $1, by the month $16.

J. J. Smyth, Gloucester, Carleton: Labor is not too plentiful. Self-binders are coming largely into use. Farmers are keeping pace with the times and are buying self-binders when they have occasion to replace their reapers.

D. Kennedy, Otonabee, Peterborough: The labor supply was quite ample. About two-thirds of the farmers use self-binders.

Thos. H. Blanchard, Sidney, Hastings: Well supplied with labor. Wages $1 per day and $16 per month for the season.

H. McKellar, McKellar, Parry Sound: Labor rather scarce. A number of farmers are now using labor-saving implements.

FROM THE NOVEMBER REPORT.

George A. Wintemute, Maidstone, Essex: The supply of farm labor has been rather scarce, and the rate of wages is not likely to fall. Domestic servants are very scarce.

Arthur J Arner, Gosfield, Essex: Farm laborers have been plentiful. The rate of wages must fall unless the price of farm produce rises. The use of labor-saving machinery also tends to lessen the rate of wages.

Thos. F. Routledge, Orford, Kent: There was a good supply of farm hands. The rate of wages is likely to fall, because we are getting more labor-saving machinery every year. It is pretty hard to get female servants.

David Newton, Dorchester S., Elgin: The supply of farm laborers was equal to the demand, but the rate of wages is likely to increase, as laborers are getting scarcer. Domestic servants are very scarce.

Sheldon Ward, Malahide, Elgin: The supply of farm labor is fully equal to the demand. Wages are likely to fall, owing to the failure of the crops making money scarce. Domestic servants are scarce.

O. E. Twiss, Middleton, Norfolk: Farm laborers were sufficient this year, and wages are likely to fall as a great many are getting machinery to do the work that was done by hand years ago. Domestic servants are rather scarce and hard to find just now.

James Morrison, Walsingham, Norfolk: The supply of farm laborers was sufficient. I don't think wages will rise, as the farm help already gets most all that is made on the farm. Domestic servants are very scarce.

Wm. Hedges, Walpole, Haldimand: Laborers are in sufficient supply. Wages cannot rise because farmers cannot pay more, and I do not think they will fall much, for the men go off to the United States rather than take much less. Hired girls are very scaree.

Cranmer Riselay, Bertie, Welland: The supply of farm laborers was equal to the demand this year, except at harvest time. Wages are not likely to rise, owing to the low price of nearly all kinds of farm produce. Domestic servants are about equal to the demand.

A. E. Wark, Plympton, Lambton: Owing to the fact that every man has a self-binder, the demand for farm laborers is not so great. I think the supply was equal to the demand with the exception of a few days during the rush at harvest. I think wages will remain about as they are. The supply of domestic servants is very limited. There is a surplus of girls, but they do not care to work out any more.

J. Dallas, Bosanquet, Lambton; The supply of farm laborers was equal to the demand. I cannot see any prospect for a rise in wages, neither is there any likelihood of a fall, as wages are low enough now. There is always a lively demand for domestic servants at good wages.

G. Fortune, Turnberry, Huron: The supply of farm laborers was sufficient. Wages are likely to fall, as self-binders and other machinery are coming more into use. Also the poor crops and low prices will make farmers hire as little labor as possible. Domestic servants are scarce.

G. Edwin Cresswell, Tuckersmith, Huron: The supply of laborers has been about equal to the demand. I fancy farm laborers' wages will remain about stationary. Farmers are yearly introducing more machinery, and doing the work with their own families, hiring as little help as possible. If the flail, the scythe and the reaping hook had to be relied upon as of old, farmers could not exist with the present style of living.

Wm. Welsh, Huron, Bruce: The supply of laborers was equal to the demand. The rate of wages is likely to fall, owing to improved machinery and farmers feeling the necessity of restricting expenditure. Good domestic servants are scarce.

Hugh Murray, Bruce, Bruce: There did not appear to be any scarcity of farm laborers. There is no prospect for a rise in wages for the present, but rather a decline. Farmers require very little help during the winter. Domestic servants are scarce. Farmers' daughters appear willing to engage in anything in preference to domestic service, and those who do enter it generally go to the cities or the American side.

A. Stephen, Sullivan, Grey: The supply of farm laborers was about equal to the demand. Wages, I think, will fall, as the farmer will not realize the means to pay for help as prices are low and there is little to sell.

George Binnie, Glenelg, Grey: Wages are not likely to rise owing to the inability of farmers to pay high wages and the more general use of labor-saving machinery. Domestic servants are scarce.

J. K. Irving, Innisfil, Simcoe: The supply of farm laborers was equal to the demand. I think wages must fall as farmers cannot afford to pay such wages these hard times, and will do without help unless the rates come down. Domestic servants are scarce.

Samuel Fraser, Tay, Simcoe: The supply of farm labor was hardly up to the demand as harvesting commenced early and everything was ripe at the same time. The many saw-mills in this township and on the north shore take all the best men, and farmers have to take the culls at high wages or go without. But in time binders will leave farmers more indepeudent of extra help.

W. D. Stanley, Biddulph, Middlesex: The supply of farm labor was equal to the demand. Wages won't rise until money becomes more pleatiful with farmers. Short crops and low prices are fast crippling them. The supply of domestic servants is larger than heretofore, though they are still inclined to be scarce.

Wm. Wright, McGillivray, Middlesex: I have heard of no scarcity of farm laborers. Wages are likely to remain at about the same figure. You cannot get young men to work for small wages whilst a dollar remains of their last earnings. Necessity only compels them to work for wages that farmers can now pay. Work will be scarce for those who work by the month. There would be an ample supply of domestic servants if all remained in the township, but the girls seem to prefer to work in towns and consequently are none too plentiful at home.

D. R. Calder, Nissouri E., Oxford: The supply of farm labor was equal to the demand. Prices are likely to fall. The increased improvements in machinery and the failure of crops with low prices compel many to do without help. Domestic servants are scarce.

Robert Leake, Oxford E., Oxford: We could always get farm help when wanted. Wages must fall to be at all equal to the price at which we sell. Domestic servants are scarce, and it is hard to find girls who are willing to work out.

D. McCormick, Dumfries S., Brant: There was a sufficient supply of farm laborers this year. Prices must fall, because farmers cannot afford to pay the wages they did in good times, and secondly they have machinery to take off their crops without so much hired help. There are lots of girls, but very few domestic servants.

John Hodgson, Hibbert, Perth: At the commencement of the harvest help was scarce for about three weeks as the crops had been hurried along by the warm weather. Wages are likely to get lower owing to the fall in prices of farm produce. Domestic servants are scarce.

John Rea, Eramosa, Wellington: The supply of farm laborers was quite equal to the demand as many farmers are not hiring help owing to poor crops and low prices. I think wages will be as high next year as a great many young men are going to the United States. Girls are hard to get to work on a farm as they get better wages in towns and cities.

W. H. Stubbs, Peel, Wellington: The supply of farm laborers this year has been equal to the demand, but as a rule there is a great lack of skill. Wages, I think, will not vary. The supply of domestic servants is very short, very high wages being offered with few to accept.

Alex. Rannie, Wellesley, Waterloo: Farm hands were plentiful. The wages were high in the summer but are not so high now. Servant girls cannot be got; they appear to be going to the large towns.

James Freebury, Mono, Dufferin: Farm laborers were rather scarce during harvest. Wages will not advance except the price of farm produce rises. The supply does not equal the demand at any time.

W. H. VanDuzer, Grimsby N., Lincoln: The supply of farm laborers was quite sufficient for the demand, but wages must go down or the farmers will go down, as the hired man has the big end of the bag this year on account of poor crops and small prices.

Robert Inksetter, Beverley, Wentworth: The supply of farm laborers was equal to the demand, and wages are more likely to fall than rise. One reason is that we get so much of our work done by machinery, and another is that we cannot afford to pay the present rate. Everyone knows what the supply of domestic servants is.

John Shaw, Esquesing, Halton: The supply of farm laborers was equal to the demand, and wages are likely to remain for a time just as they are at present. There is rather a scarcity of good domestic servants. Girls seem to prefer going to cities and towns and working in factories rather than work on a farm.

Wm. Kersey, Toronto Gore, Peel: The supply of farm help by the year or for the summer was ample, but for any special help by the day there was a scarcity. Wages will remain as they are, as there are not more men than are required to do the work that cannot be left undone. There are plenty of girls, but most of them would rather marry than hire out.

A. Forster, Markham, York: The supply of farm laborers was equal to the demand except for a few days during harvest. For first-class hands wages may keep the same, but inferior workmen must take less on account of the increased facilities for doing the work by machinery. It requires careful hands to work farm machinery properly. Good girls are scarce, as many go to the cities and towns.

R. S. Webster, Scott, Ontario: The supply and demand for farm labor was about equal. I should say that wages are likely to be slightly lower another year. There is a great want of domestic servants.

H. A. Walker, Hope, Durham: The supply of farm laborers was equal to the demand. The crops were generally light and easy to harvest. Wages must come down lower still to be on a level with the prices of farm produce. Domestic servants are very scarce. and there appears to be no remedy for it.

Robt. Hodge, Clarke, Durham: Farm laborers were not quite equal to the demand this year. Farmers cannot pay higher wages as the present hard times will not permit of it. There are not enough domestic servants—females.

W. J. Westington, Hamilton, Northumberland: The supply of farm laborers was equal to the demand. Wages must fall, as the returns from the farms will not warrant such wages as have been paid in the past. Many farmers are doing the work within their own family who formerly employed several men. Domestic servants are scarce.

George L. Hough, Athol, Prince Edward: The supply of farm laborers was equal to the demand during the summer, but help is a little scarce at present (Oct. 25.) Wages are likely to fall owing to the past very bad season and the undoubtedly hard times. Domestic servants are very scarce, as girls are induced to go to the town, where they procure work in the canning factories.

George Marlin, Sheffield, Lennox and Addington: the supply of farm laborers was equal to the demand. If we have another season like this, wages will fall. Domestic servants are very scarce.

Robt. Anglin, Pittsburg, Frontenac: The supply and demand of farm laborers was about equal. I do not expect much change in wages for some time, as present wages are what might be termed "Live and let live." Domestic servants are still very scarce.

John Elkington, M.D., Palmerston and Canonto, Frontenac: The demand was about equal to the supply. Wages are likely to rise, as the demand for the woods are very brisk. All our girls are drained by the cities at high wages as soon as partially trained here.

S. Chalmers, Wolford, Leeds and Grenville: I do not see any prospect of a fall in wages, unless, perhaps, when the C.P.R. is finished; as a great many that formerly worked on farms went on the railroad this year. Domestic servants are scarce.

James Moulton, Leeds and Lansdowne Rear, Leeds and Grenville: The supply of farm laborers was quite equal to the demand. Wages are likely to fall. The crops are poor, machinery is plentiful, times are hard, and farmers are turning their attention more to raising stock and cheese making; which does not require the help that raising grain does. Domestic servants are very scarce.

A. Harkness, Matilda, Dundas: The supply of farm laborers is equal to the demand. I see no causes operating now either to raise or lower the rate of wages sensibly. The supply of domestic servants is sufficient if the wages are sufficient to warrant the girls hiring out.

Donald P. McRae, Roxborough, Stormont: Farm laborers were hard to get the last two years on account of the railway going through the township. Wages are sure to fall a little. Domestic servants are very scarce here like everywhere else; the cities swallow them up.

James Cattanach, Lancaster, Glengarry: The supply of farm laborers was equal to the demand this year. The rate of wages is not likely to rise unless the price of produce rises. Domestic servants are not equal to the demand, and they want more wages than farmers can pay them.

Wm. Ferguson, Hawkesbury W., Prescott: There are plenty of farm laborers, and I think the rate of wages will remain about as it is. The supply of domestic servants is nothing like the demand. It is a very difficult thing to get a good servant at any price.

Robert Thistlethwaite, Hawkesbury W., Prescott: The supply of farm labor has not nearly been equal to the demand. The rate of wages is likely to rise, principally on account of the scarcity of laborers. Domestic servants are scarce—none are to be had at a reasonable price.

Peter Bolton, Russell, Russell: The labor supply has been equal to the demand. Wages are likely to fall, as on account of the crop being light and prices low farmers will do more of their own work.

Wm. Doyle, Osgoode, Carleton: The supply of farm laborers was about equal to the demand. Should wages go any higher farmers will find it more profitable to cultivate less and hire less. Machinery has reduced the demand for laborers by one-half.

Lewis Morton, Goulbourn, Carleton: The supply of farm laborers was not equal to the demand during harvest time. I think there will not be much change in the rate of wages, as farmers have been giving as high wages as they can afford, and have also been supplying themselves with labor-saving machinery. Domestic servants are hard to be got.

John Whelan, Brudenell and Lynedoch, Renfrew: There was hardly sufficient help for harvest. I do not think wages for farm hands will rise any during this fall or winter, as money is scarce and people are afraid of hard times. Domestic servants are very scarce, and their wages are good. The best girls are inclined to go to town or villages to sew or work in the factories.

Wm. Paterson, Ramsay, Lanark: As far as harvest was concerned laborers were plenty. Bush fires will lead to heavy lumbering operations, and consequently big wages. Domestic servants are scarce.

Lawrence Dowdall, Drummond, Lanark: The supply of laborers was about equal to the demand, as I have not heard of anyone wanting a man but got one. The wages for a pretty good man for haying and harvesting was about $20 a month and board.

Wm. Ramsey, Mariposa, Victoria: The supply of laborers was equal to the demand. Wages are likely to stand about the same. If any change takes place it must be downward, on account of the short crops and the low prices.

John Moloney, Douro, Peterborough: The supply of farm laborers was equal to the demand, but wages have been high, owing to the great demand in the lumbering business. The rate of wages is likely to remain firm. The supply of domestic servants is inadequate, and their wages are very high.

George A. Bartlett, Monteagle, Hastings: The supply of farm laborers was equal to the demand. I see no reason why wages should change at present. The supply of domestic servants is decidedly below the demand.

J. C. Hanley, Tyendinaga, Hastings: The supply of farm laborers was equal to the demand. The rate of wages cannot rise, as farmers are utterly unable to pay higher wages. There are very few domestic servants to be had at any price.

E. W. Hay, Macauley, Muskoka: The supply of farm laborers was equal to the demand. The rate of wages does not change much here for farm work. It is higher in winter on account of lumbering operations. Domestic servants are scarce.

Peter McDonald, Machar, Parry Sound: The supply of farm laborers was equal to the demand. Wages will likely continue the same owing to the amount of lumbering in this vicinity. There are enough domestic servants for the demand.

Robt. F. Ogle, Campbell and Carnarvon, Algoma: The supply was equal to the demand. The rate of wages is likely to remain the same, although at present there is a slight rise in wages. The supply of domestic servants is not equal to the demand.

STATISTICS OF

VALUES. RENT AND FARM WAGES.

VALUES—FARM LAND.

TABLE No. I.—Showing by County Municipalities and groups of Counties the Value of Farm Land in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value per acre.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.
Essex	15,379,951	35 70	14,683,063	34 11	15,003,289	35 09
Kent	24,005,837	42 68	24,000,254	42 25	24,077,956	42 90
Elgin	18,239,924	41 90	19,160,401	43 63	18,861,402	43 12
Norfolk	11,699,328	29 22	12,196,960	30 61	12,192,664	30 83
Haldimand	9,918,300	35 23	10.021,290	35 67	9,747,535	34 73
Welland	9,007,404	39 14	9,008,671	39 50	8,970,237	39 64
Totals	88,250,744	37 71	89,070,639	37 98	88,853,083	38 15
Lambton	19,616,111	29 52	20,279,853	30 75	20,473,874	31 41
Huron	32,681,464	40 91	32,959,302	41 28	32,476,914	40 78
Bruce	22,466,377	27 63	23,056,391	28 20	23,226,455	28 39
Totals	74,763,952	32 84	76,295,546	33 53	76,177,243	33 61
Grey	22,894,301	21 63	23,265,073	21 88	23,452,567	22 00
Simcoe	25,976,347	27 00	26,232,430	27 57	25,915,466	27 15
Totals	48,870,648	24 19	49,497,503	24 57	49,368,033	24 43
Middlesex	37,339,199	49 29	38,381,450	50 58	38,454,400	50 65
Oxford	23,794,718	50 48	24,405,541	51 71	24,359,079	51 77
Brant	10,673,619	48 99	11,117,885	51 54	10,886,119	50 35
Perth	23,150,981	44 70	23,172,777	44 75	23,073,367	44 55
Wellington	22,278,062	35 50	22,352,499	35 63	22,272,716	35 57
Waterloo	14,664,715	47 70	15,416,728	50 26	14,997,746	49 01
Dufferin	8,680,520	24 31	8,772,242	24 68	8,744,495	24 59
Totals	140,581,814	43 17	143,619,122	44 14	142,787,922	43 94
Lincoln	8,892,038	46 44	9,187,563	48 21	8,781,791	46 17
Wentworth	13,700,678	50 27	14,060,340	51 68	13,644,576	49 95
Halton	9,305,919	41 48	9,668,619	43 39	9,291,407	41 50
Peel	13,942,859	48 32	13,333,878	46 25	13,234,147	45 91
York	28,091,435	52 23	29,449,409	54 60	29,363,318	54 47
Ontario	20,315,836	40 72	21,192,926	42 33	20,984,476	42 17
Durham	16,754,389	45 40	17,282,026	46 65	16,690,806	45 32
Northumberland	15,430,332	35 40	16,705,972	38 63	15,991,286	36 92
Prince Edward	9,653,010	41 26	9,864,273	42 38	9,581,034	41 38
Totals	136,086,496	44 58	140,745,006	46 15	137,562,841	45 17
Lennox and Addington	10,114,970	24 97	11,011,318	27 73	10,647,136	26 69
Frontenac	8,542,850	13 11	9,223,770	13 83	8,980,621	13 88
Leeds and Grenville	18,695,222	25 33	17,823,642	24 14	17,474,172	23 43
Dundas	8,593,825	36 14	8,525,531	35 91	8,251,875	34 85
Stormont	6,671,119	26 86	6,237,364	25 14	6,020,513	24 20
Glengarry	7,817,343	27 01	7,272,976	25 17	6,836,622	23 61
Prescott	6,800,185	23 94	6,908,598	24 37	6,113,103	21 46
Russell	4,679,068	18 47	4,646,658	18 56	4,540,133	18 14
Carleton	15,627,555	27 72	15,507,971	27 52	14,510,526	25 83
Renfrew	6,526,211	7 53	6,601,900	7 67	5,915,710	7 12
Lanark	8,759,374	13 30	8,036,209	12 17	7,507,909	11 51
Totals	102,827,722	19 79	101,795,937	19 59	96,798,320	18 81
Victoria	12,850,011	22 79	12,464,595	22 11	12,995,054	23 09
Peterborough	11,192,602	20 99	11,304,906	21 34	11,031,313	20 98
Haliburton	945,117	1 70	951,037	1 70	746,561	1 39
Hastings	15,912,536	16 55	17,792,385	18 87	16,542,519	18 09
Totals	40,900,266	15 64	42,512,923	16 37	41,315,447	16 26
Muskoka	2,069,605	4 11	2,063,091	4 05	2,021,890	4 17
Parry Sound	1,142,481	4 47	1,050,259	4 24	982,483	4 24
Algoma	1,390,027	4 93	1,359,802	5 03	1,454,378	5 06
Totals	4,602,113	4 42	4,473,152	4 35	4,458,751	4 44
The Province	636,883,755	29 22	648,009,828	29 78	637,321,640	29 50

VALUES—FARM BUILDINGS.

TABLE No. II.—Showing by County Municipalities and groups of Counties the Value of Farm Buildings in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value per acre.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.
Essex	3,656,365	8 49	3,407,642	7 92	3,264,360	7 63
Kent	5,015,245	8 92	5,367,142	9 45	4,866,978	8 67
Elgin	4,823,847	11 08	4,874,113	11 10	4,603,953	10 52
Norfolk	3,875,286	9 68	4,069,086	10 21	3,854,176	9 75
Haldimand	3,322,395	11 80	3,374,234	12 01	3,161,873	11 27
Welland	3,220,343	13 99	3,156,526	13 84	2,999,917	13 25
Totals	23,913,481	10 22	24,248,743	10 34	22,751,257	9 77
Lambton	4,170,425	6 28	4,379,614	6 64	3,893,229	5 97
Huron	8,358,211	10 46	8,155,112	10 21	7,645,038	9 60
Bruce	6,067,257	7 46	5,537,174	6 77	5,230,875	6 39
Totals	18,595,893	8 17	18,071,900	7 94	16,769,142	7 40
Grey	6,683,760	6 31	6,663,354	6 27	6,124,389	5 75
Simcoe	6,661,292	6 92	6,559,754	6 89	6,213,922	6 51
Totals	13,345,052	6 60	13,223,108	6 56	12,338,311	6 11
Middlesex	9,694,804	12 80	10,072,194	13 27	9,235,823	12 17
Oxford	6,997,516	14 84	7,141,216	15 13	6,664,742	14 16
Brant	3,580,635	16 43	3,679,491	17 06	3,469,085	16 04
Perth	6,503,456	12 56	6,247,895	12 06	5,941,391	11 47
Wellington	6,909,296	11 01	6,815,234	10 86	6,357,991	10 15
Waterloo	4,861,550	15 81	4,919,434	16 04	4,668,775	15 26
Dufferin	2,239,423	6 27	2,130,470	6 00	1,991,933	5 60
Totals	40,786,680	12 52	41,005,934	12 60	38,329,740	11 79
Lincoln	3,350,638	17 50	3,240,080	17 00	3,133,503	16 47
Wentworth	4,917,668	18 04	4,754,027	17 47	4,528,695	16 58
Halton	3,260,482	14 53	3,473,762	15 59	3,101,122	13 85
Peel	4,367,504	15 14	4,201,677	14 57	3,945,722	13 69
York	8,128,225	15 11	8,547,045	15 84	7,928,346	14 71
Ontario	5,666,425	11 36	5,884,432	11 75	5,435,229	10 92
Durham	4,565,108	12 37	4,509,465	12 17	4,327,144	11 75
Northumberland	5,139,670	11 79	5,363,910	12 40	4,662,727	10 76
Prince Edward	3,526,392	15 07	3,120,370	13 41	3,094,211	13 37
Totals	42,922,112	14 06	43,094,768	14 13	40,156,699	13 19
Lennox and Addington	3,201,766	7 90	3,357,640	8 46	2,941.868	7 37
Frontenac	2,752,964	4 23	2,953,618	4 43	2,595,264	4 01
Leeds and Grenville	6,330,796	8 58	6,091,028	8 25	5,482,412	7 37
Dundas	2,526,069	10 62	2,558,959	10 78	2,262,963	9 56
Stormont	2,250,030	9 06	2,041,749	8 23	1,883,897	7 57
Glengarry	2,486,182	8 59	2,271,389	7 86	2,045,676	7 06
Prescott	2,028,937	7 14	2,023,897	7 14	1,641,144	5 76
Russell	1,225,426	4 84	1,077,667	4 31	997,970	3 99
Carleton	4,519,097	8 01	4,362,342	7 74	3,881,384	6 91
Renfrew	2,303,609	2 66	2,279,118	2 65	2,055,295	2 48
Lanark	3,009,847	4 57	2,821,186	4 27	2,535,885	3 89
Totals	32,634,723	6 28	31,838,593	6 13	28,323,758	5 50
Victoria	3,215,496	5 70	3,047,703	5 41	2,855,686	5 07
Peterborough	3,044,925	5 71	2,896,092	5 47	2,696,015	5 13
Haliburton	286,853	0 51	261,995	0 47	213,463	0 39
Hastings	4,889,315	5 09	4,973,830	5 27	4,547,636	4 97
Totals	11,436,589	4 37	11,179,620	4 31	10,312,800	4 06
Muskoka	581,783	1 16	562.033	1 10	508,300	1 05
Parry Sound	208,733	0 82	213,693	0 86	227,175	0 98
Algoma	328,461	1 17	309,820	1 15	300,951	1 05
Totals	1,118.977	1 08	1,085,546	1 06	1,036,426	1 03
The Province	184,753,507	8 47	183,748,212	8 44	170,018,133	7 87

VALUES—FARM IMPLEMENTS.

TABLE No. III.—Showing by County Municipalities and groups of Counties the value of Farm Implements in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value per acre.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.
Essex	952,230	2 22	1,018,731	2 37	917,043	2 15
Kent	1,387,806	2 47	1,482,389	2 61	1,371,117	2 44
Elgin	1,231,424	2 83	1,321,924	3 01	1,192,432	2 73
Norfolk	1,014,822	2 54	1,008,338	2 53	961,977	2 43
Haldimand	974,162	3 46	945,020	3 36	873,580	3 11
Welland	772,993	3 36	745,382	3 27	728,078	3 22
Totals	6,333,437	2 70	6,521,784	2 78	6,044,227	2 60
Lambton	1,167,733	1 76	1,210,073	1 84	1,125,363	1 72
Huron	2,290,314	2 87	2,332,115	2 92	2,163,236	2 72
Bruce	1,727,439	2 13	1,627,276	1 99	1,537,440	1 88
Totals	5,185,486	2 28	5,169,464	2 27	4,826,039	2 13
Grey	2,138,071	2 02	2,082,574	1 96	1,953,581	1 83
Simcoe	2,042,670	2 12	2,132,640	2 24	1,909,338	2 00
Totals	4,180,741	2 07	4,215,214	2 09	3,862,919	1 91
Middlesex	2,435,664	3 21	2,649,232	3 49	2,423,360	3 19
Oxford	1,559,715	3 31	1,638,201	3 47	1,554,665	3 30
Brant	763,211	3 50	923,163	4 28	816,605	3 78
Perth	1,769,954	3 42	1,743,279	3 37	1,684,241	2 25
Wellington	1,802,340	2 87	1,907,115	3 04	1,781,231	2 84
Waterloo	1,164,072	3 79	1,261,156	4 11	1,139,784	3 72
Dufferin	668,026	1 87	706,796	1 99	657,690	1 85
Totals	10,162,982	3 12	10,828,942	3 33	10,057,576	3 09
Lincoln	809,180	4 22	843,165	4 42	767,731	4 04
Wentworth	1,191,694	4 37	1,146,137	4 21	1,088,285	3 98
Halton	832,810	3 71	825,456	3 70	769,487	3 44
Peel	1,055,144	3 66	1,118,971	3 88	1,012,276	3 51
York	1,988,155	3 70	2,039,399	3 78	1,902,752	3 53
Ontario	1,519,675	3 05	1,482,946	2 96	1,389,450	2 79
Durham	1,187,621	3 22	1,179,198	3 18	1,116,315	3 03
Northumberland	1,385,847	3 18	1,263,015	2 92	1,197,209	2 76
Prince Edward	914,094	3 91	876,038	3 76	797,084	3 44
Totals	10,884,220	3 57	10,774,325	3 53	10,040,589	3 30
Lennox and Addington	814,747	2 01	958,379	2 41	782,600	1 96
Frontenac	790,143	1 21	910,419	1 36	756,709	1 17
Leeds and Grenville	1,517,858	2 06	1,570,922	2 13	1,389,824	1 87
Dundas	631,376	2 66	673,570	2 83	580,769	2 45
Stormont	508,093	2 05	583,697	2 35	487,741	1 96
Glengarry	674,194	2 33	710,788	2 46	594,574	2 05
Prescott	615,900	2 17	594,186	2 10	488,074	1 71
Russell	399,072	1 58	421,125	1 68	337,642	1 35
Carleton	1,312,188	2 33	1,350,391	2 40	1,183,592	2 11
Renfrew	813,341	0 94	848,712	0 98	682,806	0 82
Lanark	871,307	1 32	842,847	1 28	736,549	1 13
Totals	8,948,219	1 72	9,465,036	1 82	8,020,880	1 56
Victoria	899,108	1 60	918,528	1 63	839,518	1 49
Peterborough	761,710	1 43	758,082	1 43	692,253	1 32
Haliburton	73,324	0 13	62,774	0 11	59,840	0 11
Hastings	1,470,722	1 53	1,457,562	1 55	1,338,743	1 46
Totals	3,204,864	1 23	3,196,946	1 23	2,930,354	1 15
Muskoka	183,027	0 36	169,247	0 33	154,129	0 31
Parry Sound	71,393	0 28	69,870	0 28	79,373	0 34
Algoma	93,928	0 33	120,108	0 44	105,916	0 37
Totals	348,348	0 33	359,225	0 35	339,418	0 34
The Province	49,248,297	2 26	50,530,936	2 32	46,122,002	2 14

VALUES—FARM LIVE STOCK.

TABLE No. IV.—Showing by County Municipalities and groups of Counties the value of Farm Live Stock in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value per acre.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.
Essex	2,115,809	4 91	2,209,466	5 13	1,994,467	4 66
Kent	3,005,242	5 34	3,225,926	5 68	2,856,679	5 09
Elgin	2,580,528	5 93	2,704,451	6 16	2,582,903	5 90
Norfolk	1,888,416	4 72	1,915,557	4 81	1,795,994	4 54
Haldimand	1,836,938	6 53	1,955,289	6 96	1,729,528	6 16
Welland	1,428,057	6 21	1,414,281	6 20	1,317,840	5 82
Totals	12,854,990	5 49	13,424,970	5 73	12,277,411	5 27
Lambton	2,696,205	4 06	2,766,882	4 20	2,644,448	4 06
Huron	5,401,353	6 76	5,663,504	7 09	5,244,644	6 58
Bruce	3,986,288	4 90	4,037,143	4 94	3,703,851	4 53
Totals	12,083,846	5 31	12,467,529	5 48	11,592,943	5 12
Grey	4,811,960	4 54	4,791,578	4 50	4,657,277	4 37
Simcoe	4,039,337	4 20	4,200,034	4 41	3,894,472	4 08
Totals	8,851,297	4 38	8,991,612	4 46	8,551,749	4 23
Middlesex	5,943,174	7 85	6,312,359	8 32	5,864,967	7 72
Oxford	3,516,155	7 46	3,795,781	8 04	3,569,995	7 59
Brant	1,712,932	7 86	1,757,546	8 15	1,604,069	7 41
Perth	3,888,851	7 51	3,895,298	7 52	3,767,157	7 27
Wellington	4,277,834	6 82	4,341,773	6 92	4,094,555	6 54
Waterloo	2,211,039	7 19	2,291,004	7 47	2,168,103	7 08
Dufferin	1,407,585	3 94	1,514,969	4 26	1,441,598	4 05
Totals	22,957,570	7 05	23,908,730	7 35	22,510,444	6 93
Lincoln	1,395,760	7 29	1,510,496	7 93	1,339,301	7 04
Wentworth	2,311,020	8 48	2,229,630	8 20	2,055,151	7 52
Halton	1,552,678	6 92	1,724,904	7 74	1,567,896	7 00
Peel	2,241,112	7 77	2,229,160	7 73	2,045,577	7 10
York	3,897,620	7 25	4,190,090	7 77	3,897,275	7 23
Ontario	3,504,285	7 02	3,648,655	7 29	3,337,116	6 71
Durham	2,334,645	6 32	2,555,010	6 90	2,333,542	6 33
Northumberland	2,569,770	5 90	2,640,483	6 10	2,369,077	5 47
Prince Edward	1,416,111	6 05	1,489,710	6 40	1,251,129	5 40
Totals	21,223,001	6 95	22,218,138	7 29	20,196,064	6 63
Lennox and Addington	1,607,787	3 97	1,673,361	4 21	1,443,425	3 62
Frontenac	1,598,146	2 45	1,598,004	2 40	1,444,401	2 23
Leeds and Grenville	3,348,504	4 54	3,317,714	4 49	3,083,482	4 14
Dundas	1,348,360	5 67	1,338,603	5 64	1,202,414	5 08
Stormont	1,131,390	4 56	1,160,215	4 68	1,030,480	4 14
Glengarry	1,405,510	4 86	1,416,788	4 90	1,293,179	4 47
Prescott	1,084,980	3 82	1,073,118	3 78	983,599	3 45
Russell	729,735	2 88	722,658	2 89	688,065	2 75
Carleton	2,461,981	4 37	2,509,448	4 45	2,290,930	4 08
Renfrew	1,975,154	2 28	1,887,927	2 19	1,720,731	2 07
Lanark	2,000,924	3 04	1,914,985	2 90	1,782,060	2 73
Totals	18,692,471	3 60	18,612,821	3 58	16,962,766	3 30
Victoria	2,086,252	3 70	1,997,310	3 54	1,936,810	3 44
Peterborough	1,728,157	3 24	1,601,122	3 02	1,586,008	3 01
Haliburton	233,940	0 42	201,666	0 36	204,168	0 38
Hastings	2,710,919	2 82	2,691,399	2 85	2,557,079	2 80
Totals	6,759,268	2 58	6,491,497	2 50	6,284,065	2 47
Muskoka	517,399	1 03	537,747	1 06	455,306	0 94
Parry Sound	207,524	0 81	229,448	0 93	225,010	0 97
Algoma	259,289	0 92	326,443	1 21	283,507	0 99
Totals	984,212	0 95	1,093,638	1 06	963,823	0 96
The Province	104,406,655	4 79	107,208,935	4 93	99,339,265	4 60

VALUES—FARM PROPERTY.

TABLE No. V.—Showing by County Municipalities and groups of Counties the value of Farm Property (Land, Buildings, Implements and Live Stock) in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value per acre.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.	
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.
	$	$ c.	$	$ c.	$	$ c.
Essex	22,104,355	51 32	21,318,902	49 53	21,179,159	49 53
Kent	33,414,130	59 41	34,075,711	59 99	33,172,730	59 10
Elgin	26,875,723	61 74	28,060,889	63 90	27,240,690	62 27
Norfolk	18,477,852	46 16	19,189,941	48 16	18,804,811	47 55
Haldimand	16,051,795	57 02	16,295,833	58 00	15,512,516	55 27
Welland	14,428,797	62 70	14,324,860	62 81	14,016,072	61 93
Totals	131,352,652	56 12	133,266,136	56 83	129,925,978	55 79
Lambton	27,650,474	41 62	28,636,422	43 43	28,136,914	43 16
Huron	48,731,342	61 00	49,110,033	61 50	47,529,832	59 68
Bruce	34,247,361	42 12	34,257,984	41 90	33,698,621	41 19
Totals	110,629,177	48 66	112,004,439	49 22	109,365,367	48 26
Grey	36,528,092	34 50	36,802,579	34 61	36,187,814	33 95
Simcoe	38,719,646	42 43	39,124,858	41 11	37,933,198	39 74
Totals	75,247,738	37 24	75,927,437	37 68	74,121,012	36 68
Middlesex	55,412,841	73 15	57,415,235	75 66	55,978,550	73 73
Oxford	35,868,104	76 09	36,980,739	78 35	36,148,481	76 82
Brant	16,730,397	76 78	17,478,085	81 03	16,775,878	77 59
Perth	35,313,242	68 19	35,059,249	67 70	34,466,156	66 54
Wellington	35,267,532	56 20	35,416,621	56 45	34,506,493	55 10
Waterloo	22,901,376	74 49	23,888,322	77 88	22,974,408	75 07
Dufferin	12,995,554	36 40	13,124,477	36 93	12,835,716	36 09
Totals	214,489,046	65 86	219,362,728	67 42	213,685,682	65 75
Lincoln	14,447,616	75 45	14,781,304	77 56	14,022,326	73 72
Wentworth	22,121,060	81 16	22,190,134	81 56	21,316,707	78 03
Halton	14,951,889	66 94	15,692,741	70 42	14,729,912	65 79
Peel	21,606,619	74 89	20,883,686	72 43	20,237,722	70 21
York	42,105,435	78 29	44,225,943	81 99	43,091,691	79 94
Ontario	31.006,221	62 15	32,208,959	64 33	31,146,271	62 59
Durham	24,841,763	67 31	25,525,699	68 90	24,467,807	66 43
Northumberland	24,525,619	56 27	25,973,380	60 05	24,220,299	55 91
Prince Edward	15,509,607	66 29	15,350,391	65 95	14,723,458	63 59
Totals	211,115,829	69 16	216,832,237	71 10	207,956,193	68 29
Lennox and Addington	15,739,270	38 85	17,000,698	42 81	15,815,029	39 64
Frontenac	13,684,103	21 00	14,685,811	22 02	13,776,995	21 29
Leeds and Grenville	29,892,380	40 51	28,803,306	39 01	27,429,890	36 86
Dundas	13,099,630	55 09	13,096,663	55 16	12,298,021	51 94
Stormont	10,560,632	42 53	10,023,025	40 40	9,422,631	37 87
Glengarry	12,383,229	42 79	11,671,941	40 39	10,770,051	37 19
Prescott	10,530,002	37 07	10,599,799	37 39	9,225,920	32 38
Russell	7,033,301	27 77	6,868,108	27 44	6,563,810	26 23
Carleton	23,920,821	42 43	23,730,152	42 11	21,866,432	38 93
Renfrew	11,618,315	13 41	11,617,657	13 49	10,374,542	12 49
Lanark	14,641,452	22 23	13,615,227	20 62	12,562,403	19 26
Totals	163,103,135	31 39	161,712,387	31 12	150,105,724	29 18
Victoria	19,050,867	33 79	18,428,136	32 69	18,627,068	33 09
Peterborough	16,727,394	31 37	16,560,202	31 26	16,005,589	30 44
Haliburton	1,539,234	2 76	1,477,472	2 64	1,224,032	2 27
Hastings	24,983,492	25 99	26,915,176	28 54	24,985,977	27 32
Totals	62,300,987	23 82	63,380,986	24 41	60,842,666	23 94
Muskoka	3,351,814	6 66	3,332,118	6 54	3,139,625	6 47
Parry Sound	1,630,131	6 38	1,563,270	6 31	1,514,041	6 53
Algoma	2,071,705	7 35	2,116,173	7 83	2,144,752	7 47
Totals	7,053,650	6 78	7,011,561	6 82	6,798,418	6 77
The Province	975,292,214	44 74	989,497,911	45 47	952,801,040	44 11

VALUES—RENT OF LEASED FARMS.

TABLE No. VI.—Showing by County Municipalities and groups of Counties the average area, value and rental of leased farms in Ontario as reported in the year 1887, also the average for the Province for 1886.

Counties.	Per cent. returned as leased.	Average area of leased farm.		Average value of leased farm.		Average yearly rental.	Rent per acre based on—	
		Acres occupied.	Acres cleared.	Land.	Buildings.		Acres occupied.	Acres cleared.
				$	$	$	$ c.	$ c.
Essex	17.1	99.2	62.8	4,528	1,002	181	1 83	2 88
Kent	18.2	103.6	74.6	5,298	1,246	265	2 55	3 55
Elgin	18.0	107.0	77.3	4,830	1,229	236	2 21	3 06
Norfolk	14.8	108.4	78.8	3,612	1,251	177	1 64	2 25
Haldimand	18.8	121.7	90.8	4,541	1,364	225	1 85	2 48
Welland	11.6	100.7	77.4	4,393	1,585	207	2 06	2 67
Group	16.6	106.9	76.7	4,613	1,254	221	2 07	2 88
Lambton	13.5	106.3	68.3	3,849	988	193	1 81	2 82
Huron	11.4	104.3	78.2	4,560	1,189	242	2 32	3 09
Bruce	13.4	112.7	80.0	3,515	1,034	185	1 64	2 31
Group	12.5	107.8	76.4	4,013	1,084	209	1 94	2 74
Grey	14.2	124.3	82.9	3,046	795	161	1 30	1 94
Simcoe	17.7	115.7	83.3	3,936	1,125	218	1 89	2 62
Group	15.6	120.5	83.1	3,440	941	186	1 55	2 25
Middlesex	11.8	105.6	79.1	5,141	1,418	272	2 57	3 54
Oxford	14.3	119.7	93.0	6,445	1,585	331	2 77	3 56
Brant	19.0	113.3	92.9	5,418	1,597	338	2 99	3 64
Perth	14.0	107.9	85.1	4,844	1,225	249	2 30	2 92
Wellington	17.9	123.0	90.9	4,377	1,300	230	1 87	2 52
Waterloo	10.9	126.3	97.0	5,832	1,816	289	2 29	2 98
Dufferin	15.2	142.0	91.9	3,830	1,136	229	1 61	2 49
Group	14.5	117.5	89.0	5,106	1,417	272	2 32	3 06
Lincoln	18.6	103.8	82.9	4,606	1,354	233	2 24	2 81
Wentworth	16.7	115.2	92.3	5,101	1,875	271	2 35	2 93
Halton	19.7	131.6	103.8	5,053	1,936	302	2 29	2 91
Peel	26.1	131.1	107.3	6,023	1,659	346	2 64	3 23
York	31.0	114.5	93.7	5,903	1,618	340	2 97	3 63
Ontario	26.5	120.1	98.3	5,476	1,448	340	2 83	3 46
Durham	24.5	110.2	92.4	5,363	1,293	315	2 85	3 40
Northumberland	19.2	104.9	84.4	3,672	1,173	232	2 21	2 75
Prince Edward	12.3	131.9	102.7	4,845	1,363	243	1 84	2 37
Group	22.9	116.4	94.6	5,268	1,526	305	2 62	3 22
Lennox and Add	15.1	155.4	107.3	4,682	1,704	268	1 72	2 50
Frontenac	11.3	136.5	80.8	2,516	814	147	1 08	1 82
Leeds and Gren	12.0	141.1	97.0	4,007	1,591	229	1 63	2 37
Dundas	13.5	111.5	70.2	3,965	1,221	186	1 67	2 65
Stormont	15.2	117.4	73.0	3,689	1,470	177	1 50	2 42
Glengarry	14.9	125.3	76.1	3,437	1,299	176	1 40	2 31
Prescott	19.1	102.6	70.6	3,156	819	164	1 60	2 32
Russell	17.4	118.5	65.3	3,113	1,154	139	1 18	2 14
Carleton	9.8	118.5	83.5	4,498	1,143	208	1 72	2 49
Renfrew	7.7	175.8	68.5	1,389	621	109	0 62	1 60
Lanark	6.8	190.7	99.8	2,885	1,120	145	0 76	1 45
Group	11.6	134.9	81.4	3,377	1,112	180	1 33	2 21
Victoria	17.4	124.5	86.8	4,753	1,083	258	2 07	2 96
Peterborough	13.7	156.6	93.7	3,471	886	185	1 18	1 97
Haliburton	3.0	152.5	26.3	367	200	38	0 25	1 42
Hastings	10.3	136.1	89.0	3,929	1,322	223	1 64	2 50
Group	12.2	138.4	86.4	3,933	1,049	216	1 56	2 50
Muskoka	4.5	169.0	30.8	1,057	335	62	0 37	2 02
Parry Sound	4.1	176.2	41.0	1,250	333	88	0 50	2 15
Algoma	4.4	134.3	37.0	1,007	356	62	0 46	1 68
Group	4.4	162.3	34.3	1,084	340	67	0 41	1 96
The Province 1887	15.0	118.1	84.5	4,458	1,270	239	2 02	2 83
The Province 1886	15.3	121.1	85.7	4,808	1,340	255	2 10	2 97

VALUES—MARKET PRICES.

TABLE No. VII.—Showing the average prices of Agricultural Products at the leading markets of Ontario for July-December in 1887, and the average for the half-year, and for the Province.

Products.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	Peterborough.	St. Thomas.	Stratford.	Toronto.	The Province.	
														1887.	1886.
FALL WHEAT, per bush.:	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
July	74.7	77.5	76.5	....	78.0	82.5	78.0	75.8	82.5	79.0	76.5	80.3	80.3	78.2	73.6
August	72.9	81.0	75.5	72.5	76.5	77.7	76.0	73.5	86.4	72.8	76.5	76.4	78.6	76.9	73.9
September	78.1	77.5	78.0	81.0	76.6	78.4	74.0	75.2	82.5	77.0	76.2	76.5	79.6	77.7	73.7
October	76.3	77.5	75.7	81.0	77.4	77.5	74.0	76.1	82.9	80.3	76.8	76.5	78.3	77.6	72.1
November	77.4	77.5	78.3	80.1	79.5	78.1	74.9	76.7	81.4	80.9	77.1	78.3	80.9	78.9	72.4
December	79.5	77.5	81.3	80.8	80.7	78.3	77.5	79.4	79.5	82.6	80.8	80.4	83.9	81.4	75.7
Average	76.1	78.2	77.3	80.1	78.4	78.2	76.0	76.0	82.7	79.1	77.4	78.2	80.2	78.4	73.6
SPRING WHEAT, per bush.:															
July	74.7	77.5	76.5	....	78.0	82.5	79.3	75.8	85.4	78.5	76.5	80.3	80.0	78.3	71.8
August	72.9	81.0	75.5	72.5	76.5	78.2	78.5	73.5	88.9	72.5	76.5	76.4	78.3	77.0	71.8
September	78.1	77.5	78.0	81.0	76.6	78.4	76.5	73.5	82.5	77.5	76.1	76.5	78.8	77.5	71.9
October	76.0	77.5	75.7	81.0	77.4	78.3	76.5	74.2	84.1	79.8	76.8	76.5	78.4	77.4	71.8
November	77.5	77.5	78.3	80.1	79.0	78.4	77.1	76.5	81.4	80.7	77.1	77.6	80.0	78.6	72.0
December	80.0	77.5	81.3	80.8	79.1	78.9	79.0	76.7	80.9	82.1	80.8	77.8	79.8	79.4	75.4
Average	76.1	78.2	77.3	80.1	78.0	78.6	78.0	75.0	84.2	78.8	77.4	77.6	79.2	78.0	72.5
BARLEY, per bush.:															
July	41.0	47.5	48.0	...	43.1	42.5	....	43.2	48.8	.....	.....	43.4	49.0	46.3	52.4
August	....	47.5	48.0	53.5	53.6	48.5	....	43.2	50.4	57.5	.....	45.3	52.2	48.8	54.2
September	50.0	47.5	48.0	60.5	56.1	54.3	52.5	45.9	53.1	.....	47.5	47.8	59.7	53.7	53.2
October	54.1	47.5	48.5	63.8	59.3	58.9	60.4	52.4	51.4	66.9	47.5	49.3	63.4	57.6	50.8
November	64.5	47.5	54.0	69.5	65.1	66.6	68.6	57.0	53.2	71.1	47.5	56.9	70.2	63.9	49.3
December	59.2	47.5	55.0	67.0	64.6	67.4	67.5	57.3	58.5	71.5	56.3	60.0	68.3	64.1	47.6
Average	56.3	47.5	49.1	65.5	58.9	60.1	63.2	49.6	52.3	68.3	48.3	50.4	61.5	56.7	51.3
OATS, per bush.:															
July	32.2	31.0	28.5	....	31.9	31.5	26.2	34.0	30.7	30.0	30.5	30.3	36.2	33.3	33.8
August	33.3	34.2	27.5	33.0	34.8	31.7	29.0	34.1	34.2	32.0	34.3	32.3	36.9	34.5	35.3
September	33.2	37.9	26.0	35.0	32.9	33.5	30.0	31.3	33 0	36.0	32.7	28.4	36.7	33.9	33.0
October	34.2	38.6	26.9	33.9	33.3	33.4	30.0	31.7	32.6	34.5	31.1	28.4	37.1	34.0	29.6
November	34.9	39.2	27.0	38.3	33.9	35.6	31.3	32.3	32.8	34.9	29.0	30.8	38.8	34.6	30.0
December	36.4	41.9	31.8	41.3	34.4	38.8	35.3	34.3	38.4	37.9	32.3	32.3	39.2	36.9	29.7
Average	33.7	37.1	27.6	37.3	33.6	35.0	30.3	32.9	33.6	34.8	31.5	30.4	37.5	34.6	32.0
RYE, per bush.:															
July	49.0	47.5	....	....	51.0	....	50.0	.....	37.5	.....	.....	.....	.....	47.2	53.7
August	49.0	47.5	....	45.0	51.0	....	50.0	.....	37.5	45.0	.....	.....	56.0	47.5	53.8
September	49.0	47.5	....	45.0	51.0	47.5	50.0	53.2	.....	.....	.....	.....	.....	49.8	53.5
October	49.0	47.5	42.5	46.9	51.0	48.8	50.0	52.8	37.5	48.0	.....	.....	.....	50.5	51.1
November	49.0	47.5	60.0	49.4	51.0	52.6	50.0	50.4	37.5	48.0	....	.....	.....	50.1	49.2
December	55.5	47.5	.. .	51.5	51.0	61.3	50.0	.. ...	47.5	48.0	.....	....	.....	50.9	48.8
Average	49.2	47.5	51.3	48.8	51.0	52.5	50.0	51.9	39.0	47.1	.....	.....	56.0	49.5	52.2
PEASE, per bush:															
July	50.0	61.3	47.5	....	51.0	52.5	49.0	50.4	52.5	51.0	.....	50.8	54.9	52.7	54.0
August	51.0	62.5	47.5	50.0	51.0	53.2	49.0	51.3	53.2	51.8	.....	51.0	56.3	53.2	54.4
September	51.9	62.5	47.5	50.0	53.1	54.9	49.0	49.7	55.4	51.5	47.5	50.4	59.8	54.6	54.0
October	53.3	57.5	48.6	56.3	56.7	55.0	51.3	51.0	54.4	64.8	47.5	52.8	60.5	55.8	52.1
November	57.2	59.5	47.5	58.8	58.1	59.6	55.0	54.2	56.9	65.5	47.5	55.5	62.1	58.0	50.3
December	58.5	62.5	....	61.5	60.1	65.0	55.0	58.7	60.9	69.8	52.5	58.5	64.2	61.6	50.6
Average	52.9	61.0	47.8	57.8	55.9	57.9	51.5	52.4	55.4	61.2	48.0	53.2	59.5	55.9	52.6

VALUES—MARKET PRICES.—*Continued.*

TABLE No. VII.—Showing the average prices of Agricultural Products, etc.—*Continued.*

Products.	Brantford.	Brockville.	Chatham.	Cobourg.	Guelph.	Kingston.	Lindsay.	London.	Ottawa.	Peterborough.	St. Thomas.	Stratford.	Toronto.	The Province.	
														1887.	1886.
CORN, per bush. (in ear):	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
October	28.1	.....	21.7	.....	.....	30.0	.....	29.1	32.5	.....	26.3	.....	.....	27.8	28.4
November	29.0	.....	20.4	.....	.....	31.6	.....	28.8	29.8	.....	26.3	.....	.....	28.5	28.6
December	29.3	.....	24.6	.....	.....	35.1	.....	29.1	35.4	.....	29.0	.....	.....	30.1	26.2
Average	28.8	.....	21.9	.....	.....	32.8	.....	29.0	31.8	.....	26.6	.....	.....	28.7	27.6
BUCKWHEAT, per bush.:															
October	35.5	42.5	.....	.....	.....	50.0	.....	42.2	.....	.....	.....	.....	.....	41.7	34.5
November	38.5	44.5	.....	.....	.....	47.5	.....	47.7	.....	.....	.....	.....	.....	46.2	34.2
December	51.5	47.5	.....	.....	.....	55.5	.....	46.8	.....	.....	.....	.....	.....	47.8	32.0
Average	38.6	44.8	.....	.....	.....	51.0	.....	45.5	.....	.....	.....	.....	.....	45.0	33.7
BEANS, per bush.:															
October	75.0	95.0	117.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	99.4	78.5
November	75.0	95.0	126.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.3	86.4
December	75.0	95.0	135.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.3	85.0
Average	75.0	95.0	122.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.9	83.7
POTATOES, p. bush:															
October	72.9	47.5	76.8	50.0	60.5	60.0	46.3	67.4	52.0	62.0	75.8	62.4	62.2	63.2	43.1
November	67.9	47.8	66.5	49.4	59.9	61.3	47.5	70.0	53.7	58.3	63.3	62.6	60.1	61.5	43.7
December	72.5	47.5	.....	50.0	60.0	62.5	47.5	74.5	56.6	63.4	63.8	60.7	64.7	63.7	47.9
Average	70.4	47.6	73.3	49.8	60.1	61.4	47.1	70.5	54.4	60.9	66.5	61.8	62.4	62.8	44.9
CARROTS, p. bush.:															
October	.....	.....	.....	.....	.....	50.0	.....	22.5	40.0	.....	.....	.....	36.8	26.1	29.7
November	.....	.....	.....	.....	.....	46.3	.....	22.5	40.0	.....	.....	.....	22.8	24.7	29.7
December	.....	.....	.....	.....	.....	50.0	.....	22.5	55.0	.....	.....	.....	36.7	32.4	29.2
Average	.....	.....	.....	.....	.....	48.3	.....	22.5	47.5	.....	.....	.....	30.3	28.0	29.6
TURNIPS, p. bush.:															
October	.....	33.1	.....	.....	....	50.0	.....	22.5	34.5	.....	30.0	....	32.9	29.5	26.1
November	.....	37.8	.....	.....	11.9	46.3	.....	27.1	34.5	.....	30.0	....	30.0	29.4	24.3
December	...	37.5	.....	.....	10.8	48.3	.....	27.5	37.5	.....	30.0	....	30.0	29.7	23.7
Average	.....	36.2	.....	.....	11.4	47.8	.....	25.7	36.0	.....	30.0	....	30.6	29.5	24.6
WOOL, per lb.:															
July	.....	20.0	.....	.....	24.0	21.0	23.0	24.0	19.0	21.0	23.5	21.0	24.1	23.5	18.9
August	.....	20.0	.....	.....	24.0	21.2	23.0	22.0	19.0	20.5	23.1	....	24.0	22.5	19.0
September	.....	20.0	.....	.....	24.0	19.8	23.0	22.0	19.0	21.0	22.0	....	23.3	21.9	18.9
October	20.8	20.0	.....	.....	.....	19.8	.....	22.0	20.0	19.9	22.0	....	22.6	21.7	19.3
November	20.5	20.0	.....	.....	22.0	19.1	.....	.....	19.4	20.2	22.0	....	21.9	20.5	19.4
December	18.5	20.0	.....	19.0	.....	19.3	.....	.....	20.0	20.3	22.0	....	21.8	20.2	19.3
Average	19.9	20.0	.....	19.0	23.8	19.7	23.0	22.5	19.5	20.3	22.6	21.0	23.3	22.1	19.1
HAY, per ton:	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
July	9 00	9 88	.....	.....	7 81	8 50	7 70	8 88	11 40	10 00	7 50	7 20	12 74	10 25	9 06
August	9 00	10 10	.....	8 50	8 63	10 00	7 88	10 33	9 92	9 38	7 50	6 63	13 25	10 64	9 21
September	9 00	12 00	.....	10 50	8 90	9 50	8 00	10 82	10 10	10 00	10 13	6 50	13 08	11 24	9 80
October	9 75	13 25	.....	10 67	9 25	10 50	.....	10 88	11 05	14 10	11 00	8 00	14 79	12 49	10 23
November	9 92	14 50	7 50	10 50	10 20	11 75	11 00	11 76	11 00	13 92	11 00	8 50	15 55	12 84	10 09
December	10 38	13 50	.....	10 60	9 67	12 19	11 00	11 67	10 91	12 63	11 75	8 85	13 40	12 32	9 93
Average	9 35	12 21	7 50	10 43	9 85	11 10	9 22	10 69	10 76	12 26	8 95	7 60	13 80	11 62	9 69

VALUES—FALL WHEAT.

TABLE No. VIII.—Showing by County Municipalities and groups of Counties the marketable value of Fall Wheat in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	461,082	15 23	524,163	16 31	566,584	17 45	87
Kent	761,272	12 69	1,023,662	16 10	1,061,605	17 26	74
Elgin	512,912	11 76	717,832	16 93	781,095	17 37	68
Norfolk	362,172	11 34	399,269	11 47	528,308	15 92	71
Haldimand	408,274	12 34	393,325	11 36	493,184	14 87	83
Welland	274,340	12 02	327,671	14 40	329,881	14 28	84
Totals	2,780,052	12 54	3,385,922	14 70	3,760,657	16 46	76
Lambton	492,612	13 88	476,278	14 76	576,857	16 91	82
Huron	743,773	10 75	1,170,487	16 85	1,281,380	17 83	60
Bruce	514,706	11 34	754,775	16 16	914,464	17 62	64
Totals	1,751,091	11 67	2,401,540	16 18	2,772,701	17 56	66
Grey	284,756	12 93	332,518	14 65	532,038	18 60	70
Simcoe	691,181	13 55	546,067	12 64	1,042,020	18 99	71
Totals	975,937	13 36	878,585	13 26	1,574,058	18 86	71
Middlesex	903,162	12 58	1,062,155	16 35	1,360,450	17 94	70
Oxford	582,353	14 35	560,556	15 93	697,529	17 55	82
Brant	341,649	11 71	369,555	12 25	532,218	16 74	70
Perth	497,667	10 30	792,511	16 59	856,844	18 05	57
Wellington	338,559	12 98	410,358	16 16	533,130	18 17	71
Waterloo	522,623	12 86	594,851	14 87	765,023	18 63	69
Dufferin	103,870	11 02	151,733	15 18	213,198	17 64	63
Totals	3,289,883	12 37	3,941,719	15 55	4,958,392	17 88	69
Lincoln	272,153	12 65	318,440	13 79	377,591	16 75	76
Wentworth	406,043	12 99	373,823	11 53	566,815	17 40	75
Halton	345,460	16 33	230,073	11 27	405,741	17 53	93
Peel	310,970	12 77	391,383	13 59	548,514	19 41	66
York	467,001	13 69	447,720	15 04	785,502	19 61	70
Ontario	99,892	14 69	78,731	15 77	226,509	20 35	72
Durham	46,015	14 31	50,547	17 08	62,999	18 87	76
Northumberland	133,196	13 52	170,250	18 56	188,612	19 21	70
Prince Edward	13,392	13 99	19,225	15 87	33,013	14 44	97
Totals	2,094,122	13 67	2,080,192	12 61	3,195,296	18 45	74
Lennox and Addington	10,930	8 51	23,770	14 84	32,616	15 81	54
Frontenac	10,142	10 63	12,960	14 35	36,092	17 32	61
Leeds and Grenville	31,575	10 94	53,337	15 33	96,479	16 82	65
Dundas	1,869	12 54	4,922	16 19	24,603	17 50	72
Stormont	5,369	12 54	4,593	14 72	14,194	16 74	75
Glengarry	3,062	10 97	2,426	11 28	11,642	15 24	72
Prescott	306	11 77	59	14 75	1,029	11 56	102
Russell	762	10 58	230	17 69	3,977	16 78	63
Carleton	11,329	13 80	1,848	13 69	26,782	14 21	97
Renfrew	3,561	14 02	3,542	12 88	21,027	17 32	81
Lanark	24,167	12 49	29,263	14 61	60,830	17 88	70
Totals	103,072	11 34	136,950	14 81	329,271	16 69	68
Victoria	105,325	13 74	162,657	17 01	168,658	17 73	77
Peterborough	119,674	14 32	183,782	19 14	190,699	19 05	75
Haliburton	1,758	14 90	839	11 34	1,253	14 24	105
Hastings	90,654	11 57	127,057	19 28	142,494	17 18	67
Totals	317,411	13 24	474,335	18 36	503,104	18 03	73
Muskoka	894	14 90	640	11 03	856	15 29	97
Parry Sound	360	13 33	44	14 67	678	16 54	81
Algoma	8,617	19 99	434	12 76	6,962	21 69	92
Totals	9,871	19 06	1,118	11 77	8,496	20 33	94
The Province	11,321,439	12 61	13,300,361	15 00	17,101,975	17 66	72

VALUES—SPRING WHEAT.

TABLE No. IX.—Showing by County Municipalities and groups of Counties the marketable value of Spring Wheat in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7 also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value. per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	13,824	10 05	18,334	10 51	23,487	13 03	77
Kent	33,050	9 36	44,901	12 99	36,643	12 74	73
Elgin	8,455	7 80	34,866	10 39	26,128	12 23	64
Norfolk	5,415	6 93	9,340	8 84	11,522	11 93	58
Haldimand	21,283	7 06	25,718	8 90	35,720	11 67	60
Welland	7,234	6 86	14,822	9 70	22,474	11 79	58
Totals	89,261	8 23	147,981	10 55	155,974	12 23	67
Lambton	30,976	5 50	92,855	10 06	93,155	12 08	46
Huron	55,862	5 87	192,062	8 84	257,911	11 48	51
Bruce	94,255	7 32	179,293	11 30	180,362	11 78	62
Totals	181,093	6 46	464,210	9 91	531,428	11 68	55
Grey	241,393	7 57	403,767	10 53	601,240	12 65	60
Simcoe	279,743	8 31	503,130	13 94	486,229	13 33	62
Totals	521,136	7 95	906,897	12 19	1,087,469	12 95	61
Middlesex	44,737	6 01	183,371	9 77	177,758	12 27	49
Oxford	45,300	6 59	137,259	9 96	163,394	13 51	49
Brant	4,310	7 35	12,877	8 61	17,776	11 51	64
Perth	32,180	4 68	125,214	8 57	201,081	12 61	37
Wellington	96,417	6 11	208,045	10 66	301,746	12 55	49
Waterloo	17,704	6 16	53,714	9 71	84,927	12 79	48
Dufferin	178,957	9 43	212,716	11 82	261,127	12 46	76
Totals	419,605	7 06	933,196	10 35	1,207,809	12 62	56
Lincoln	8,287	6 66	20,132	9 22	31,009	12 50	53
Wentworth	15,304	7 28	27,489	9 64	37,092	12 63	58
Halton	19,701	7 46	32,256	10 00	46,879	12 77	58
Peel	84,933	8 58	116,596	10 82	196,542	14 70	58
York	199,788	8 46	334,705	13 52	412,033	14 97	57
Ontario	439,227	10 33	708,429	15 35	739,081	15 20	68
Durham	285,610	9 81	391,870	12 43	617,846	15 02	65
Northumberland	191,915	8 53	274,279	10 90	394,606	12 92	66
Prince Edward	62,299	10 92	63,316	10 77	90,313	12 09	90
Totals	1,307,064	9 38	1,969,072	12 91	2,565,401	14 43	65
Lennox and Addington	55,150	9 82	65,607	11 06	93,733	13 42	73
Frontenac	69,391	9 66	93,817	11 39	121,564	13 87	70
Leeds and Grenville	125,894	9 06	185,718	12 67	202,945	14 44	63
Dundas	71,957	13 00	93,882	15 81	79,906	16 38	79
Stormont	69,960	13 26	72,441	13 48	71,707	15 92	83
Glengarry	109,128	12 79	120,901	13 54	115,232	14 43	87
Prescott	94,223	11 06	144,750	15 86	112,476	13 77	80
Russell	46,038	11 57	62,946	14 05	64,433	14 75	78
Carleton	256,169	13 31	258,405	12 22	332,667	14 84	90
Renfrew	212,760	9 64	298,458	12 09	368,946	14 90	65
Lanark	136,779	9 58	163,809	11 40	200,147	13 90	69
Totals	1,247,449	10 93	1,560,734	12 70	1,763,756	14 54	75
Victoria	210,814	8 92	335,876	12 12	466,164	13 64	65
Peterborough	204,317	8 81	308,580	12 25	325,481	12 33	71
Haliburton	13,787	10 34	12,658	11 92	14,215	10 79	96
Hastings	107,213	8 33	171,449	11 64	246,890	14 23	59
Totals	536,131	8 78	828,563	12 06	1,052,750	13 29	66
Muskoka	12,289	9 21	13,107	11 01	21.158	13 52	68
Parry Sound	10,661	11 83	13,690	11 39	25,790	15 18	78
Algoma	69,142	16 18	63,501	11 48	121,561	18 36	88
Totals	92,092	14 15	90,298	11 39	168,509	17 05	83
The Province	4,393,831	9 06	6,900,951	11 95	8,533,096	13 63	66

VALUES—BARLEY.

TABLE No. X.—Showing by County Municipalities and groups of Counties the marketable value of Barley in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7 ; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	39,125	16 26	41,317	14 28	34,587	15 26	107
Kent	80,151	13 49	72,786	14 69	86,115	15 13	89
Elgin	49,699	11 82	61.287	15 14	66,683	15 21	78
Norfolk	69,932	10 97	69,875	12 03	89,514	14 80	74
Haldimand	129,021	9 79	177,008	12 34	184,604	12 46	79
Welland	39,956	10 99	38,421	10 97	54,030	13 16	83
Totals	407,884	11 41	460,694	12 96	515.533	13 82	83
Lambton	174,347	12 54	186,645	15 29	206,008	14 31	88
Huron	393,849	14 08	314,883	14 50	407,832	15 87	89
Bruce	240,297	12 61	269,093	13 62	277,762	15 09	84
Totals	808,493	13 27	770,621	14 36	891,602	15 24	87
Grey	291,617	12 29	316,193	12 51	347,048	14 32	86
Simcoe	450,044	13 12	414,015	13 52	424,677	15 07	87
Totals	741,661	12 78	730,208	14 41	771,725	14 72	87
Middlesex	176,850	12 74	175,453	14 93	219,878	14 93	85
Oxford	235,789	13 72	216,065	15 88	281,542	17 08	80
Brant	271,657	12 70	240,870	13 23	252,694	15 41	82
Perth	221,583	14 08	204,014	15 41	291,734	16 53	85
Wellington	476,696	13 43	477,965	14 42	525,342	15 71	85
Waterloo	221,755	14 38	214,663	14 57	257,497	17 11	84
Dufferin	180,672	13 75	178,530	13 69	158,534	14 35	96
Totals	1,785,002	13 49	1,707,560	14 51	1,987,221	15 92	85
Lincoln	35,657	10 06	35,913	11 39	59,592	14 42	70
Wentworth	167,625	12 30	161,127	12 51	187,213	15 73	78
Halton	188,212	14 15	169,461	12 15	195,253	15 76	90
Peel	505,393	13 40	437,076	12 99	508,663	15 87	84
York	877,741	14 07	882,733	15 26	873,515	16 24	87
Ontario	576,502	14 38	612,543	16 17	577,139	16 11	89
Durham	677,318	13 19	797,958	15 25	696,788	15 72	84
Northumberland	551,471	11 14	564,911	11 69	603,950	13 50	83
Prince Edward	387,849	10 03	351,345	10 11	466,257	11 58	87
Totals	3,967,768	12 79	4,013,067	13 62	4,168,370	14 92	86
Lennox and Addington	420,463	11 49	446,545	11 80	539,337	13 02	88
Frontenac	134,952	10 08	165,803	12 35	255,689	14 07	72
Leeds and Grenville	125,523	12 97	138,354	13 46	161,717	14 54	89
Dundas	67,034	14 18	78,226	15 29	124,709	17 50	81
Stormont	27,439	14 93	23,971	14 16	39,158	16 33	91
Glengarry	26,094	11 57	25,024	12 22	27,281	13 12	88
Prescott	48,917	14 69	46,435	17 19	32,880	14 30	103
Russell	23,837	13 23	16,677	12 40	18,619	13 89	95
Carleton	134,834	16 58	133,820	14 32	119,863	16 31	102
Renfrew	19,312	10 05	19,757	14 56	17,794	14 33	70
Lanark	35,065	11 47	38,426	13 91	38,080	15 30	75
Totals	1,063,470	12 26	1,133,038	12 89	1,375,127	14 17	87
Victoria	444,477	13 04	439,741	12 89	412,307	14 24	92
Peterborough	145,653	10 33	200,988	12 97	192,763	14 16	73
Haliburton	3,232	11 34	3,095	12 63	3,876	13 79	82
Hastings	327,305	9 80	522,317	13 10	553,692	13 70	72
Totals	920,667	11 25	1,166,141	12 99	1,162,638	13 96	81
Muskoka	7,407	12 58	7,097	10 62	6,832	12 24	103
Parry Sound	5,730	10 91	12,984	12 65	9,383	13 23	82
Algoma	7,366	17 01	8,389	11 80	8,340	14 79	115
Totals	20,503	13 25	28,470	11 84	24,555	13 41	99
The Province	9,715,448	12 66	10,009,799	13 60	10,896,771	14 83	85

VALUES—OATS.

TABLE No. XI.—Showing by County Municipalities and groups of Counties the marketable value of Oats in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	449,039	13 84	401,251	13 91	379,584	13 77	100
Kent	432,909	12 61	455,163	13 96	455,162	14 37	88
Elgin	368,546	11 12	412,214	13 56	425,631	13 60	82
Norfolk	206,960	7 35	253,055	10 45	308,587	11 85	62
Haldimand	199,964	8 78	227,839	10 73	249,144	11 76	75
Welland	192,478	9 10	187,876	10 95	209,172	11 26	81
Totals	1,849,896	10 76	1,937,398	12 54	2,027,280	12 97	83
Lambton	435,588	10 75	462,064	12 45	476,901	12 91	83
Huron	982,789	12 51	866,569	11 82	947,796	13 38	93
Bruce	634,941	10 28	648,403	10 99	664,115	12 14	85
Totals	2,053,318	11 36	1,977,036	11 67	2,088,812	12 86	88
Grey	900,335	9 91	919,073	10 55	930,380	11 74	84
Simcoe	661,194	9 88	827,050	12 16	716,868	12 20	81
Totals	1,561,529	9 89	1,746,123	11 25	1,647,248	11 93	83
Middlesex	813,115	11 25	864,097	12 57	920,689	13 69	82
Oxford	587,146	10 68	661,383	12 92	686,000	13 84	77
Brant	172,878	9 30	186,704	11 02	233,360	13 23	90
Perth	727,597	12 48	715,231	13 20	744,407	14 39	87
Wellington	826,841	10 74	827,971	11 84	831,268	12 94	83
Waterloo	413,051	11 35	383,627	11 22	447,287	13 58	84
Dufferin	357,884	11 20	340,869	11 69	323,234	12 18	92
Totals	3,898,512	11 15	3,979,882	12 27	4,186,245	13 51	83
Lincoln	147,663	8 00	163,135	10 02	208,955	11 99	67
Wentworth	257,736	8 93	313,016	11 26	369,928	13 37	67
Halton	200,628	10 71	186,781	10 29	229,506	12 98	83
Peel	309,089	10 70	295,316	10 88	353,890	13 33	80
York	758,571	11 48	817,392	13 09	841,063	14 25	81
Ontario	553,789	11 35	665,401	13 55	604,733	13 34	85
Durham	332,919	10 05	425,856	12 45	420,782	13 09	77
Northumberland	250,262	7 54	311,135	9 93	311,795	10 92	69
Prince Edward	94,083	6 84	150,064	9 69	130,627	9 66	71
Totals	2,904,740	10 02	3,328,096	11 81	3,471,279	12 96	77
Lennox and Addington	195,447	7 91	228,350	9 55	229,280	10 64	74
Frontenac	190,658	6 78	263,876	9 44	276,853	10 67	64
Leeds and Grenville	622,126	9 42	717,431	10 64	718,561	11 63	81
Dundas	291,281	9 80	401,293	12 80	366,475	13 01	75
Stormont	274,052	11 25	316,967	12 48	309,379	12 71	89
Glengarry	316,112	10 38	315,041	10 19	360,264	12 15	85
Prescott	307,662	11 13	324,987	12 02	280,096	11 06	101
Russell	194,398	10 09	217,819	10 84	206,855	11 61	87
Carleton	678,169	11 12	661,280	10 42	732,777	13 06	85
Renfrew	330,248	7 80	469,125	10 98	442,316	11 68	67
Lanark	334,208	8 23	409,734	10 13	408,155	11 78	70
Totals	3,734,361	9 47	4,325,903	10 79	4,331,011	11 92	79
Victoria	426,824	10 36	442,188	11 57	424,819	11 90	87
Peterborough	262,100	8 42	326,156	10 72	322,679	11 53	73
Haliburton	39,643	8 04	55,776	11 20	44,934	9 83	82
Hastings	315,791	7 43	478,351	10 60	435,508	10 72	69
Totals	1,044,358	8 72	1,302,471	10 97	1,227,940	11 28	77
Muskoka	83,994	9 01	88,885	9 64	84,954	10 62	85
Parry Sound	45,572	11 07	41,622	11 08	48,769	11 52	96
Algoma	71,163	14 27	45,579	10 99	47,960	13 07	109
Totals	200,729	10 89	176,086	10 28	181,683	11 43	95
The Province	17,247,443	10 25	18,772,995	11 57	19,161,498	12 58	81

VALUES—RYE.

TABLE No. XII.—Showing by County Municipalities and groups of Counties the marketable value of Rye in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value of produce per acre under crop and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	6,171	9 36	7,178	10 81	9,161	11 74	80
Kent	8,548	8 13	5,207	9 62	6,984	11 86	69
Elgin	7,798	7 55	8,701	9 08	11,451	9 94	76
Norfolk	38,827	5 37	43,171	7 23	60,224	8 52	63
Haldimand	1,157	6 19	2,245	8 22	10,094	10 66	58
Welland	3,583	7 04	5,451	10 86	6,766	10 07	70
Totals	66,084	6 19	71,953	8 08	104,680	9 34	66
Lambton	408	7 41	408	8 87	1,857	9 67	77
Huron	1,964	9 01	3,727	15 66	2,998	10 82	83
Bruce	2,684	7 76	2,349	7 83	3,665	9 64	80
Totals	5,056	8 17	6,484	11 10	8,520	10 04	81
Grey	4,537	9 65	1,462	10 44	5,978	10 64	91
Simcoe	11,140	7 85	8,835	8 14	25,857	11 62	68
Totals	15,677	8 30	10,297	8 41	31,835	11 42	73
Middlesex	3,840	7 18	1,789	10 05	4,475	10 15	71
Oxford	4,258	6 34	6,368	10 61	9,449	8 78	72
Brant	6,382	6 60	3,372	7 93	7,220	8 57	77
Perth	2,050	4 95	1,284	10 44	2,230	8 64	57
Wellington	5,071	7 42	3,379	9 71	8,745	10 69	69
Waterloo	2,954	8 66	2,970	9 22	5,877	10 69	81
Dufferin	4,768	6 93	7,647	13 05	9,569	10 66	65
Totals	29,323	6 82	26,809	10 38	47,565	9 74	70
Lincoln	450	6 92	2,645	9 03	4,866	9 71	71
Wentworth	4,550	6 83	1,974	8 09	9,955	10 76	63
Halton	1,859	7 59	1,715	8 09	5,299	10 58	72
Peel	731	5 94	4,416	10 44	19,246	12 84	46
York	4,907	8 04	4,953	8 05	18,378	9 77	82
Ontario	11,317	7 76	11,074	7 41	34,029	10 93	71
Durham	21,335	5 98	29,630	7 95	49,321	9 26	64
Northumberland	49,911	5 52	52,804	7 56	96,934	8 35	66
Prince Edward	36,686	5 87	56,312	7 15	75,487	8 21	71
Totals	131,746	5 98	165,523	7 57	313,515	9 07	66
Lennox and Addington	20,201	7 03	29,887	8 28	51,550	9 19	76
Frontenac	6,185	6 09	5,916	8 15	41,811	10 55	58
Leeds and Grenville	11,033	6 21	19,193	8 35	86,285	11 18	56
Dundas	4,116	5 94	10,556	11 17	22,992	14 47	41
Stormont	1,882	10 39	2,629	12 70	7,162	13 09	79
Glengarry			172	7 82	731	11 08	
Prescott	328	6 56	2,757	10 21	3,412	11 01	60
Russell	356	14 83			3,366	12 56	118
Carleton	26,517	7 99	29,992	9 87	76,350	10 93	73
Renfrew	32,670	6 78	54,391	11 07	84,221	11 97	57
Lanark	9,133	7 12	18,544	8 67	66,602	12 19	58
Totals	112,421	7 01	174,037	9 58	444,482	11 23	62
Victoria	3,614	9 90	5,649	7 31	11,744	10 05	99
Peterborough	13,441	6 30	26,619	8 70	33,472	9 72	65
Haliburton	1,596	6 19	1,152	7 68	2,943	10 29	60
Hastings	59,959	6 26	82,464	8 42	147,594	9 51	66
Totals	78,610	6 37	115,884	8 41	195,753	9 59	66
Muskoka	2,087	8 42	3,204	9 40	5,126	12 12	69
Parry Sound	408	7 42	2,779	11 48	5,330	13 06	57
Algoma	1,557	8 42	603	7 83	1,170	10 17	83
Totals	4,052	8 30	6,586	9 98	11,626	12 29	68
The Province	442,969	6 48	577,573	8 52	1,157,976	10 05	64

VALUES—PEASE.

TABLE No. XIII.—Showing by County Municipalities and groups of Counties the marketable value of Pease in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value of produce per acre under crop and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	46,271	8 30	43,246	9 83	43,253	11 23	74
Kent	146,854	9 01	156,611	12 16	105,674	11 77	77
Elgin	111,830	6 26	195,531	12 41	123,897	10 90	57
Norfolk	107,589	5 33	192,728	11 49	154,779	11 34	47
Haldimand	87,376	6 19	208,036	11 64	139,416	10 98	56
Welland	42.052	7 77	39,636	9 74	39,254	10 07	77
Totals	541,972	6 82	835,788	11 65	606,273	11 14	61
Lambton	94,553	6 91	157,714	12 78	95,004	11 17	62
Huron	450,956	12 42	433,838	12 69	415,319	13 88	89
Bruce	493,611	12 57	498,498	12 50	517,996	14 47	87
Totals	1,039,120	11 64	1,090,050	12 61	1,028,319	13 86	84
Grey	527,310	11 39	560.219	12 03	601,381	13 69	83
Simcoe	316,573	9 87	426,315	12 45	417,187	13 65	72
Totals	843,883	10 77	986,534	12 21	1,018,568	13 68	79
Middlesex	260,748	9 55	313.747	12 27	227,617	11 64	82
Oxford	184,729	9 71	240,081	13 01	186,908	13 23	73
Brant	53,202	5 29	110,339	11 05	99,675	11 58	46
Perth	299,520	12 35	331,584	14 34	302,349	14 26	87
Wellington	481,472	11 80	510,266	13 32	513,648	14 17	83
Waterloo	136,081	8 65	192,571	12 45	183,935	13 72	63
Dufferin	140,626	11 85	133,676	12 79	141,585	12 88	92
Totals	1,556,378	10 44	1,832,264	12 96	1,655,717	13 34	78
Lincoln	36,247	6 33	55,056	10 57	48,966	10 99	58
Wentworth	98,020	7 88	129,862	11 68	120,082	12 27	64
Halton	76,284	6 50	130,591	12 14	134,368	13 22	49
Peel	123,857	8 27	157,576	11 50	160,670	12 68	65
York	319,131	10 76	365,371	12 31	357,221	13 56	79
Ontario	296,444	9 39	387,522	13 02	335,178	12 99	72
Durham	215,410	8 88	272,178	12 50	276,393	12 69	70
Northumberland	135,707	5 80	232,839	11 18	218,070	10 79	54
Prince Edward	141,298	6 15	191,932	10 89	111,007	10 09	61
Totals	1,442,398	8 16	1,922,927	11 99	1,761,955	12 39	66
Lennox and Addington	61,791	6 73	110,441	11 25	103,189	11 79	57
Frontenac	68,303	6 43	123,740	9 82	133,487	11 53	56
Leeds and Grenville	57,785	9 25	65,492	10 89	78,891	12 38	75
Dundas	19,688	11 18	17,158	12 26	24,921	14 02	80
Stormont	24,498	9 92	27,609	10 73	36,353	13 06	76
Glengarry	60,801	12 30	58,017	9 34	75,081	11 62	106
Prescott	69,160	9 75	84,185	10 85	101,220	9 81	99
Russell	33,157	10 51	34,051	9 17	54,440	12 64	83
Carleton	150,785	11 79	152,123	10 86	181,238	13 49	87
Renfrew	179,364	8 83	231,199	10 02	258,892	12 46	71
Lanark	102,837	8 75	135,798	10 89	159,881	14 06	62
Totals	828,169	9 17	1,039,813	10 44	1,207,593	12 33	74
Victoria	180,060	9 88	201,281	11 87	203,905	12 73	78
Peterborough	115,974	7 27	190,621	11 18	183,849	12 16	60
Haliburton	18,185	10 48	17,359	11 18	18,827	12 18	86
Hastings	123,328	6 24	242,071	11 82	195,824	10 91	57
Totals	437,547	7 86	651,332	11 62	602,405	11 90	66
Muskoka	30,192	10 72	33,074	12 04	33,688	12 78	84
Parry Sound	17,105	14 16	11,496	10 15	17,035	13 34	106
Algoma	68,128	17 47	35,726	9 90	53,072	16 28	107
Totals	115,425	14 57	80,296	10 72	103,795	14 47	101
The Province	6,804,892	9 36	8.439,004	11 99	7,984,625	12 77	73

VALUES—WHEAT TO PEASE.

TABLE No. XIV.—Showing by County Municipalities and groups of Counties the aggregate marketable value of Wheat, Barley, Oats, Rye and Pease in Ontario in the years 1886 and 1887, with the yearly average for the six years, 1882-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	1,015,512	13 96	1,035,489	14 65	1,056,656	15 37	91
Kent	1,462,784	12 07	1,758,330	14 90	1,752,183	15 74	77
Elgin	1,059,240	10 49	1,430,431	14 76	1,434,885	15 06	70
Norfolk	790,895	8 36	967,438	10 92	1,152,934	13 25	63
Haldimand	847,075	9 81	1,034,171	11 33	1,112,162	12 95	76
Welland	559,643	10 25	613,877	12 40	661,577	12 66	81
Totals	5,735,149	10 81	6,839,736	13 28	7,170,397	14 33	75
Lambton	1,228,484	11 24	1,375,964	13 33	1,449,782	14 23	79
Huron	2,629,193	11 86	2,981,566	13 52	3,313,236	14 99	79
Bruce	1,980,494	11 08	2,352,411	12 96	2,558,364	14 50	76
Totals	5,838,171	11 45	6,709,941	13 28	7,321,382	14 66	78
Grey	2,249,948	10 45	2,533,232	11 51	3,018,065	13 47	78
Simcoe	2,409,875	10 98	2,725,412	12 87	3,112,838	14 75	74
Totals	4,659,823	10 72	5,258,644	12 18	6,130,903	14 09	76
Middlesex	2,202,452	11 40	2,600,612	13 69	2,910,867	15 14	75
Oxford	1,639,575	11 77	1,821,712	13 72	2,024,822	15 21	77
Brant	850,078	10 52	923,717	11 96	1,142,943	14 88	71
Perth	1,780,597	11 57	2,169,838	14 32	2,398,645	15 55	74
Wellington	2,225,056	11 36	2,437,984	13 06	2,713,879	14 43	79
Waterloo	1,314,168	11 80	1,442,396	13 08	1,744,546	15 91	74
Dufferin	966,777	11 24	1,025,171	12 62	1,107,247	13 42	84
Totals	10,978,703	11 43	12,421,430	13 36	14,042,949	14 99	76
Lincoln	500,457	9 90	595,321	11 86	730,979	14 18	70
Wentworth	949,278	10 67	1,007,291	11 54	1,291,085	15 05	71
Halton	832,144	12 27	750,877	11 26	1,017,046	15 06	81
Peel	1,334,973	11 51	1,402,363	12 25	1,787,525	15 62	74
York	2,627,139	12 14	2,852,874	13 91	3,287,712	15 76	77
Ontario	1,977,171	11 55	2,463,700	14 54	2,516,669	14 82	78
Durham	1,578,607	10 92	1,968,039	13 43	2,124,129	14 35	76
Northumberland	1,312,462	8 90	1,606,218	11 33	1,813,967	12 47	71
Prince Edward	735,607	8 33	832,194	10 05	906,704	10 83	77
Totals	11,847,838	10 86	13,478,877	12 66	15,475,816	14 40	75
Lennox and Addington	763,982	9 52	904,600	10 93	1,049,705	12 15	78
Frontenac	479,631	7 83	666,112	10 43	865,496	12 27	64
Leeds and Grenville	973,936	9 69	1,179,525	11 32	1,344,878	12 60	77
Dundas	455,945	10 71	606,037	13 45	643,606	14 32	75
Stormont	403,200	11 67	448,210	12 61	477,953	13 50	87
Glengarry	515,197	11 09	521,581	10 79	590,231	12 55	88
Prescott	520,596	11 16	603,173	12 86	531,113	11 42	98
Russell	298,548	10 55	331,723	11 19	351,690	12 41	85
Carleton	1,257,803	11 94	1,237,468	11 14	1,469,677	13 58	88
Renfrew	777,915	8 48	1,076,472	11 09	1,193,196	12 84	66
Lanark	642,189	8 81	795,574	10 73	933,695	13 01	68
Totals	7,088,942	9 98	8,370,475	11 33	9,451,240	12 79	78
Victoria	1,371,114	10 95	1,587,392	12 47	1,687,597	13 44	81
Peterborough	861,159	9 08	1,236,746	12 27	1,248,943	12 93	70
Haliburton	78,201	9 03	90,879	11 27	86,048	10 64	85
Hastings	1,024,250	8 13	1,623,709	11 89	1,722,002	12 29	66
Totals	3,334,724	9 40	4,538,726	12 17	4,744,590	12 81	73
Muskoka	136,863	9 52	146,007	10 26	152,614	11 53	82
Parry Sound	79,836	11 69	82,615	11 22	106,985	12 79	91
Algoma	225,973	15 91	154,232	10 93	239,065	16 43	97
Totals	442,672	12 50	382,854	10 72	498,664	13 79	91
The Province	49,926,022	10 79	58,000,683	12 63	64,835,941	14 12	76

VALUES—CORN.

TABLE No. XV.—Showing by County Municipalities and groups of Counties the marketable value of Corn in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	533,466	18 07	647,786	20 70	607,811	19 63	92
Kent	329,069	13 96	532,244	20 05	451,019	17 68	79
Elgin	207,413	15 02	284,874	21 62	262,791	19 08	79
Norfolk	125,051	9 09	262,952	20 01	206,945	15 86	57
Haldimand	21,173	17 44	22,490	20 06	21,087	18 26	96
Welland	92,708	17 60	94,496	18 91	94,742	18 00	98
Totals	1,308,880	15 02	1,844,842	20 44	1,644,395	18 33	82
Lambton	88,333	14 23	103,165	17 93	102,268	16 74	85
Huron	22,021	23 86	22,039	21 73	24,378	22 76	105
Bruce	5,970	14 35	8,521	19 32	7,887	17 60	82
Totals	116,324	15 41	133,725	18 55	134,533	17 63	87
Grey	5,005	11 48	6,143	16 56	5,150	14 51	79
Simcoe	5,794	7 65	12,109	15 87	8,925	12 41	62
Totals	10,799	9 05	18,252	16 10	14,075	13 11	69
Middlesex	131,173	14 37	179,138	18 48	163,197	17 49	82
Oxford	109,039	14 54	128,483	18 32	121,664	16 94	86
Brant	55,552	13 87	76,314	19 89	68,674	17 60	79
Perth	12,046	15 31	8,887	19 32	9,966	17 51	87
Wellington	7,032	14 35	4,703	16 56	6,353	16 59	86
Waterloo	8,028	10 33	15,363	21 16	12,910	15 33	67
Dufferin	1,125	11 48	530	16 56	988	14 97	77
Totals	323,995	14 22	413,418	18 75	383,752	17 23	83
Lincoln	91,865	15 22	93,500	17 77	98,728	17 31	88
Wentworth	65,947	15 66	57,589	18 47	66,972	17 97	87
Halton	7,118	7 65	9,031	11 04	9,620	11 30	68
Peel	4,535	11 48	6,193	17 25	5,308	15 61	74
York	16,891	15 07	16,200	17 94	18,537	18 34	82
Ontario	28,243	12 30	35,046	17 48	28,171	13 62	90
Durham	14,361	9 02	20,658	16 25	17,931	12 12	74
Northumberland	46,901	13 13	44,057	14 77	42,373	12 64	104
Prince Edward	54,927	11 12	33,521	12 42	45,525	10 68	104
Totals	330,788	13 18	315,795	16 26	333,165	14 62	90
Lennox and Addington	20,671	11 84	21,579	15 55	23,464	14 17	84
Frontenac	18,285	13 14	15,527	13 25	20,493	14 07	93
Leeds and Grenville	90,770	18 68	62,263	18 00	69,829	16 52	113
Dundas	33,755	26 31	23,771	17 94	25,593	19 24	137
Stormont	18,899	16 26	12,354	16 56	16,567	16 52	98
Glengarry	6,802	14 35	6,124	19 32	7,582	15 25	94
Prescott	16,280	16 96	19,927	14 90	18,370	15 00	113
Russell	2,944	7 89	4,413	18 86	3,966	11 73	67
Carleton	12,432	13 44	10,603	10 49	14,866	14 48	93
Renfrew	7,336	17 22	5,081	19 32	5,899	15 24	113
Lanark	14,416	15 05	12,038	12 97	13,100	12 94	116
Totals	242,590	16 66	193,680	15 90	219,529	15 52	107
Victoria	7,706	14 35	5,560	23 46	6,515	15 97	90
Peterborough	3,022	8 04	2,926	18 40	4,546	12 88	62
Haliburton	1,033	11 48	1,007	13 79	1,289	13 15	87
Hastings	63,495	14 64	50,769	14 26	52,326	13 00	113
Totals	75,256	14 09	60,262	14 96	64,676	13 25	106
Muskoka	2,728	16 14	1,711	10 69	2,084	11 91	136
Parry Sound	402	11 49	469	13 79	447	13 97	82
Algoma	402	11 49	111	13 88	436	13 21	87
Totals	3,532	14 78	2,291	11 34	2,967	12 36	120
The Province	2,412,164	14 72	2,982,265	19 06	2,797,092	17 19	86

VALUES—BUCKWHEAT.

TABLE No. XVI.—Showing by County Municipalities and groups of Counties the marketable value of Buckwheat in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	4,640	9 53	6,043	9 16	7,608	10 87	88
Kent	7,113	7 74	6,340	7 25	7,560	8 15	95
Elgin	8,983	6 55	9,902	6 67	9,958	7 08	92
Norfolk	33,620	6 84	33,591	6 96	35,377	7 37	93
Haldimand	4,453	5 58	7,014	7 41	4,869	6 39	87
Welland	11,761	7 42	12,606	6 38	13,146	7 59	98
Totals	70,570	7 01	75,496	7 01	78,518	7 60	92
Lambton	3,604	11 59	1,437	4 61	3,306	8 52	136
Huron	2,734	11 25	2,701	5 39	2,514	7 57	149
Bruce	5,065	10 80	3,645	5 90	3,408	7 78	139
Totals	11,403	11 15	7,783	5 44	9,228	7 97	140
Grey	1,998	5 18	3,315	7 30	2,735	6 79	76
Simcoe	3,030	6 75	2,923	5 39	2,583	6 35	106
Totals	5,028	6 02	6,238	6 26	5,318	6 57	92
Middlesex	3,965	5 13	5,560	6 57	4,353	6 37	81
Oxford	2,799	4 50	4,497	7 86	4,337	6 77	66
Brant	3,454	4 73	4,422	7 70	4,733	6 99	68
Perth	527	4 50	1,301	6 74	1,087	6 97	65
Wellington	675	9 00	1,355	7 92	774	8 32	108
Waterloo	963	9 00	712	7 42	929	8 08	111
Dufferin	2,016	9 00	725	6 09	1,222	7 94	113
Totals	14,399	5 44	18,572	7 22	17,435	6 92	79
Lincoln	4,019	7 15	5,269	7 83	4,537	7 81	92
Wentworth	3,622	7 20	5,173	6 95	5,457	8 11	89
Halton	1,161	6 75	898	6 07	922	5 87	115
Peel	1,397	6 75	337	6 74	1,348	7 79	87
York	1,395	5 63	2,351	7 30	1,458	6 72	84
Ontario	3,402	8 40	5,095	10 11	3,381	9 06	93
Durham	10,562	8 74	10,132	7 29	9,561	7 93	110
Northumberland	57,778	8 89	58,932	7 65	51,165	8 20	108
Prince Edward	58,693	8 12	57,484	7 32	62,897	8 75	93
Totals	142,029	8 34	145,671	7 51	140,726	8 32	100
Lennox and Addington	19,418	6 93	35,405	7 78	25,957	8 19	85
Frontenac	15,342	7 74	13,281	7 82	14,476	8 66	89
Leeds and Grenville	36,490	8 08	41,151	8 11	45,198	8 91	91
Dundas	12,490	7 88	15,072	10 59	16,291	10 61	74
Stormont	20,230	10 13	22,446	11 80	23,382	11 25	90
Glengarry	5,134	7 20	5,217	7 58	5,792	8 61	84
Prescott	6,178	4 50	13,783	9 15	12,475	7 63	59
Russell	5,988	6 00	13,243	10 78	8,217	8 23	73
Carleton	18,589	4 23	35,740	9 14	31,704	7 78	54
Renfrew	8,711	6 88	13,706	10 45	12,479	9 28	74
Lanark	24,652	5 20	46,094	8 09	44,395	8 03	65
Totals	173,222	6 57	255,138	8 80	240,366	8 65	76
Victoria	1,510	4 05	1,870	5 05	1,609	4 34	93
Peterborough	5,115	5 13	6,875	8 09	6,445	7 19	71
Haliburton	772	5 40	1,403	7 58	1,174	5 24	103
Hastings	32,055	7 50	43,472	8 84	37,189	8 74	86
Totals	39,452	6 82	53,620	8 48	46,417	8 08	84
Muskoka	4,316	15 75	2,680	11 12	2,973	11 52	137
Parry Sound	189	9 00	438	6 74	335	8 42	107
Algoma	801	9 00	89	5 93	470	9 04	100
Totals	5,306	13 82	3,207	9 99	4,378	10 40	133
The Province	461,409	7 19	565,725	7 99	542,386	8 27	87

VALUES—BEANS.

TABLE No. XVII.—Showing by County Municipalities and groups of Counties the marketable value of Beans in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Valve per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	5,175	15 18	10,107	20 93	11,109	21 95	69
Kent	149,318	11 85	224,259	18 58	194,584	15 02	79
Elgin	12,410	13 12	19,711	22 32	17,957	17 89	73
Norfolk	3,792	12 72	5,138	14 68	5,667	13 15	97
Haldimand	808	14 69	440	12 57	792	12 98	113
Welland	2,937	10 16	7,971	16 64	5,945	12 57	81
Totals	174,440	12 00	267,626	18 72	236,054	15 30	78
Lambton	4,978	13 27	6,076	16 92	6,240	15 80	84
Huron	1,097	22 85	4,570	25 11	2,662	23 15	99
Bruce	2,467	19 58	1,627	10 04	2,016	15 16	129
Totals	8,542	15 56	12,273	17 46	10,918	16 98	92
Grey	1,453	13 71	1,821	18 97	1,631	14 56	94
Simcoe	1,836	30 60	2,218	20 92	1,890	21 24	144
Totals	3,289	19 81	4,039	20 00	3,521	17 52	113
Middlesex	1,992	12 07	3,626	15 90	3,619	14 89	81
Oxford	3,280	24 48	2,637	20 93	3,346	21 59	113
Brant	1,204	10 03	3,638	17 41	2,936	13 47	74
Perth	1,304	17 62	753	25 10	851	18 91	93
Wellington	740	17 62	921	16 75	725	15 43	114
Waterloo	548	19 57	1,038	16 74	684	17 10	114
Dufferin	714	26 44	552	16 73	454	20 64	128
Totals	9,782	16 58	13,165	17 72	12,615	16 38	101
Lincoln	1,183	11 95	2,354	18 83	2,080	15 88	75
Wentworth	1,868	17 14	1,657	25 11	1,660	18 65	92
Halton	628	17 94	1,356	16 74	864	16 94	106
Peel	842	19 58	670	16 75	702	18 47	106
York	2,049	22 52	1,723	26 51	2,411	21 92	103
Ontario	1,416	22 13	2,938	25 11	2,725	21 98	101
Durham	3,950	13 81	4,013	17 08	4,298	15 41	90
Northumberland	5,899	20 77	9,125	26 45	6,981	21 09	98
Prince Edward	4,728	10 87	13,001	15 63	7,564	14 83	73
Totals	22,563	15 60	36,837	19 33	29,285	17 61	89
Lennox and Addington	3,340	15 83	2,960	13 39	2,480	14 25	111
Frontenac	4,780	22 03	9,341	23 29	7,798	23 77	93
Leeds and Grenville	7,708	23 64	7,622	24 27	6,894	20 16	117
Dundas	5,796	19 58	4,709	24 27	4,141	20 30	96
Stormont	2,369	19 58	1,393	18 82	2,150	23 12	85
Glengarry	1,410	19 58	2,511	25 11	1,627	22 29	88
Prescott	4,949	17 07	7,364	21 34	7,577	18 53	92
Russell	1,766	13 38	1,984	12 56	3,201	17 30	77
Carleton	4,296	12 56	8,393	19 61	7,621	18 41	68
Renfrew	5,420	15 66	10,987	26 22	9,457	24 37	64
Lanark	3,948	18 11	2,561	23 71	3,206	18 86	96
Totals	45,782	17 81	59,825	21 66	56,152	20 20	88
Victoria	1,378	15 66	954	16 74	1,028	16 06	98
Peterborough	749	14 69	1,758	19 53	1,676	11 03	133
Haliburton	294	9 80	293	20 93	446	14 87	66
Hastings	2,939	13 12	5,665	22 39	4,340	19 73	66
Totals	5,360	13 64	8,670	20 94	7.490	16 07	85
Muskoka	356	16 18	791	29 30	711	24 52	66
Parry Sound	37	18 50	117	16 71	142	15 78	117
Algoma	29	14 50	151	16 78	87	17 40	83
Totals	422	16 23	1,059	24 63	940	21 86	74
The Province	270,180	13 33	403,494	19 15	356,975	16 23	82

VALUES—HAY AND CLOVER.

TABLE No. XVIII.—Showing by County Municipalities and groups of Counties the marketable value of Hay and Clover in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	597,849	16 85	502,862	13 86	593,641	16 11	105
Kent	834,723	17 43	627,951	12 11	794,448	15 40	113
Elgin	762,748	15 34	622,689	13 08	727,266	14 79	104
Norfolk	525,898	12 90	525,741	13 57	534,948	13 38	96
Haldimand	748,351	14 76	673,988	13 66	717,740	14 31	103
Welland	687,091	14 87	604,288	12 40	651,231	13 86	107
Totals	4,156,660	15 35	3,557,519	13 05	4,019,274	14 63	105
Lambton	926,509	18 59	620,015	11 14	820,004	15 34	121
Huron	1,749,728	18 01	1,161,686	12 40	1,446,962	15 29	118
Bruce	1,547,354	17 43	884,677	10 76	1,126,901	13 49	129
Totals	4,223,591	17 92	2,666,378	11 52	3,393,867	14 65	122
Grey	1,789,352	15 22	1,105,009	9 69	1,397,797	12 04	126
Simcoe	1,257,458	16 85	858,001	11 92	981,701	13 36	126
Totals	3,046,810	15 85	1,963,010	10 55	2,379,498	12 55	126
Middlesex	1,261,921	15 22	1,165,000	13 08	1,315,904	14 96	102
Oxford	915,191	15 22	853,805	14 05	943,110	15 30	99
Brant	447,637	13 83	406,583	12 60	439,510	13 72	101
Perth	1,219,438	17 78	792,468	12 02	1,019,565	15 12	116
Wellington	1,603,804	19 06	1,144,592	13 66	1,352,096	16 30	117
Waterloo	676,435	16 38	660,451	15 31	648,897	15 38	107
Dufferin	569,961	17 43	306,863	9 30	445,731	13 40	130
Totals	6,694,387	16 65	5,329,762	13 06	6,164,813	15 13	110
Lincoln	633,534	14 76	608,474	13 76	637,289	14 95	99
Wentworth	605,681	13 48	494,384	10 77	599,821	13 22	102
Halton	433,635	12 78	415,294	12 11	465,454	13 62	94
Peel	601,230	15 34	596,516	15 41	585,920	15 14	101
York	1,220,518	16 85	893,176	12 11	1,043,519	14 13	119
Ontario	858,962	16 04	746,953	13 95	789,323	14 86	108
Durham	672,078	16 15	634,705	14 15	629,689	14 54	111
Northumberland	681,560	12 90	786,198	13 95	731,202	13 39	96
Prince Edward	359,139	13 25	523,221	14 54	471,781	14 73	90
Totals	6,066,337	14 85	5,698,921	13 33	5,953,998	14 25	104
Lennox and Addington	456,945	8 72	767,593	15 41	630,924	12 86	68
Frontenac	519,751	8 37	755,936	11 72	707,691	11 24	74
Leeds and Grenville	1,507,660	13 13	1,477,192	12 11	1,612,549	14 00	94
Dundas	648,954	18 59	524,229	15 02	589,690	16 82	111
Stormont	553,949	17 43	471,806	14 53	506,305	15 90	110
Glengarry	794,134	22 31	530,876	15 79	589,456	17 33	129
Prescott	646,816	18 48	445,265	14 15	461,900	14 39	128
Russell	388,828	20 34	209,469	12 50	259,137	14 08	144
Carleton	1,286,706	20 68	831,228	13 76	944,843	15 68	132
Renfrew	1,026,604	15 69	742,894	12 40	718,365	11 71	134
Lanark	1,218,647	19 64	895,094	14 15	1,008,397	16 21	121
Totals	9,048,994	15 72	7,651,582	13 45	8,029,257	14 27	110
Victoria	549,045	13 60	417,833	10 95	473,651	12 05	113
Peterborough	403,179	10 69	491,167	12 89	440,303	11 28	95
Haliburton	156,614	16 04	95,088	8 92	114,984	11 54	139
Hastings	946,705	14 29	789,066	10 76	877,492	12 81	112
Totals	2,055,543	13 43	1,793,154	11 19	1,906,430	12 16	110
Muskoka	408,001	17 66	217,763	9 59	281,586	12 73	139
Parry Sound	120,906	15 80	61,561	7 27	96,581	11 02	143
Algoma	126,519	11 62	76,532	8 53	107,248	10 79	108
Totals	655,426	15 74	355,856	8 86	485,415	11 89	132
The Province	35,947,748	15 76	29,016,182	12 64	32,332,552	14 17	111

VALUES—POTATOES.

TABLE No. XIX.—Showing by County Municipalities and groups of Counties the marketable value of Potatoes in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	80,706	29 92	108,034	40 48	105,473	37 71	79
Kent	93,896	32 27	173,895	52 89	138,157	42 72	76
Elgin	89,855	32 16	126,522	51 75	98,101	36 84	87
Norfolk	64,371	20 81	108,417	39 03	90,154	28 93	72
Haldimand	35,632	30 90	68,401	56 39	65,882	46 27	67
Welland	69,121	30 95	75,009	41 67	77,831	34 76	89
Totals	433,581	29 14	660,278	46 52	575,598	37 20	78
Lambton	101,096	38 16	110,227	44 55	111,443	40 38	95
Huron	239,602	51 77	194,852	41 56	275,720	56 29	92
Bruce	192,665	44 89	163,390	36 59	243,815	53 34	84
Totals	533,363	46 10	468,469	40 29	630,978	51 60	89
Grey	361,344	59 97	293,296	46 00	412,486	62 38	96
Simcoe	243,617	39 87	335,247	53 19	366,930	56 95	70
Totals	604,961	49 85	628,543	49 57	779,416	59 70	84
Middlesex	191,903	39 24	265,238	50 77	210,104	39 48	99
Oxford	107,751	37 99	128,753	48 31	106,733	36 17	101
Brant	76,270	37 26	99,866	53 32	96,603	45 98	81
Perth	184,439	53 91	138,391	43 33	171,517	48 62	111
Wellington	281,409	53 07	258,688	51 19	289,855	52 67	101
Waterloo	132,087	48 65	107,011	40 58	141,840	50 75	96
Dufferin	194,549	68 53	128,867	51 46	176,872	59 88	114
Totals	1,168,408	48 58	1,126,814	48 67	1,193,524	47 45	102
Lincoln	73,431	40 10	86,710	49 52	74,519	42 05	95
Wentworth	137,339	46 91	145,814	48 16	163,619	52 70	89
Halton	38,081	26 26	56,451	40 61	69,624	45 90	57
Peel	89,538	32 74	111,427	46 96	112,296	42 01	78
York	293,608	45 82	293,132	45 89	276,197	39 41	116
Ontario	198,481	52 22	200,628	58 27	200,270	54 32	96
Durham	130,368	41 82	189,400	65 51	158,143	52 52	80
Northumberland	171,041	38 65	158,165	42 66	169,819	41 75	93
Prince Edward	77,460	35 19	122,252	45 06	99,800	42 34	83
Totals	1,209,347	41 85	1,363,979	49 27	1,324,287	45 35	92
Lennox and Addington	141,441	43 17	161,868	52 45	179,684	53 62	81
Frontenac	140,264	43 03	208,701	59 75	156,383	43 98	98
Leeds and Grenville	410,209	62 04	350,632	54 97	413,371	60 94	102
Dundas	158,770	74 57	110,987	47 82	164,971	70 41	106
Stormont	150,054	81 64	101,002	49 39	118,792	60 06	136
Glengarry	168,731	75 36	94,334	38 61	139,717	56 31	134
Prescott	157,298	66 40	149,522	59 36	146,854	59 26	112
Russell	72,349	51 42	52,091	33 96	72,512	46 72	110
Carleton	291,069	61 12	276,619	47 46	317,452	56 42	108
Renfrew	189,505	50 24	298,086	73 82	260,918	66 73	75
Lanark	175,351	52 28	196,684	56 91	217,944	61 00	86
Totals	2,055,041	58 69	2,000,526	53 86	2,188,598	58 16	101
Victoria	153,910	50 35	164,179	60 99	158,889	54 19	93
Peterborough	101,904	40 10	155,115	62 62	131,388	51 75	77
Haliburton	28,021	43 18	47,271	87 06	35 662	58 18	74
Hastings	196,358	41 64	363,157	66 94	303,573	58 12	72
Totals	480,193	43 80	729,722	65 52	629,512	55 67	79
Muskoka	78,478	55 38	111,047	87 44	85,193	62 69	88
Parry Sound	60,119	96 19	52,753	88 96	54,115	87 99	109
Algoma	82,293	113 04	47,417	71 09	60,043	85 90	132
Totals	220,890	79 74	211,217	83 48	199,351	74 58	107
The Province	6,705,784	47 80	7,189,548	51 30	7,521,264	51 26	93

VALUES—CARROTS.

TABLE No. XX.—Showing by County Municipalities and groups of Counties the marketable value of Carrots in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	5,684	56 84	6,867	78 93	7,739	84 12	68
Kent	8,759	59 18	16,814	98 33	15,440	98 34	60
Elgin	10,627	63 63	13,171	126 64	12,769	93 20	68
Norfolk	5,170	35 66	11,105	102 82	8,456	74 18	48
Haldimand	4,533	53 33	6,465	71 04	6,383	75 99	70
Welland	4,290	41 65	7,234	139 12	6,425	88 01	47
Totals	39,063	52 22	61,656	100 58	57,212	87 08	60
Lambton	11,857	71 00	16,544	104 71	14,654	92 16	77
Huron	30,152	78 52	53,933	118 02	50,108	120 45	65
Bruce	18,190	59 64	24,980	103 65	24,451	98 59	60
Totals	60,199	70 33	95,457	111 52	89,213	108 40	65
Grey	29,563	66 58	62,977	116 62	54,884	110 65	60
Simcoe	25,312	48 21	70,402	126 62	55,002	99 64	48
Totals	54,875	56 63	133,379	121 70	109.886	104 85	54
Middlesex	26,464	61 83	52,496	110 29	40,508	89 22	69
Oxford	21,231	85 61	35,671	127 85	28,860	106 49	80
Brant	11,351	70 50	20,206	132 93	21,836	126 22	56
Perth	39.124	95 42	48,941	139 83	50,166	124 17	77
Wellington	26,680	69 84	23,557	92 74	24,565	87 42	80
Waterloo	13,321	60 55	46,268	145 04	30,903	117 06	52
Dufferin	12,325	99 40	14,563	118 40	13,664	110 19	90
Totals	150,496	76 28	241,702	123 76	210,502	106 80	71
Lincoln	6,176	62 38	9,762	100 64	8,863	90 44	69
Wentworth	14,819	67 67	19,965	140 60	21,975	113 27	60
Halton	7,347	93 00	19,903	121 36	12,111	110 10	84
Peel	20,920	75 25	23,224	86 33	21,236	79 24	95
York	32,500	68 86	67,527	116 43	70,551	125 31	55
Ontario	29,750	77 07	57,255	112 71	50,432	110 84	70
Durham	26,654	59 76	50,001	119 62	45,784	103 82	58
Northumberland	9,870	58 40	25,605	107 58	19,255	92 57	63
Prince Edward	466	17 26	2,294	74 00	1,548	53 38	32
Totals	148,502	68 28	275,536	112 60	251,755	106 41	64
Lennox and Addington	4,477	57 40	5,000	84 75	4,524	70 69	81
Frontenac	7,933	53 60	19,121	84 61	13,677	84 43	63
Leeds and Grenville	12,281	76 76	14,003	88 63	12,069	84 40	91
Dundas	3,150	70 00	5,061	88 79	3,495	81 28	86
Stormont	952	28 00	1,657	118 36	1,151	57 55	49
Glengarry	4,004	77 00	2,546	59 21	2,855	67 98	113
Prescott	4,687	57 86	5,594	124 31	4,359	77 84	74
Russell	11,921	91 00	8,135	83 87	11,199	94 91	96
Carleton	24,549	50 10	48,526	92 25	42,460	86 13	58
Renfrew	4,848	49 47	11,544	111 00	7,871	78 71	63
Lanark	4,720	40 00	12,960	91 27	10,917	89 48	45
Totals	83,522	58 20	134,147	91 19	114,577	84 06	69
Victoria	23,795	70 82	33,523	122 35	30,508	103 42	68
Peterborough	11,139	41 41	27,374	100 64	23,675	80 53	51
Haliburton	1,890	70 00	3,700	148 00	2,221	105 76	66
Hastings	7.280	41 60	13,660	98 27	15,268	94 83	44
Totals	44,104	54 65	78,257	110 22	71,672	92 96	59
Muskoka	4,676	51 38	5,062	66 61	5,195	64 14	80
Parry Sound	2,587	92 39	2,664	132 20	2,368	107 64	86
Algoma	1,568	56 00	1,850	74 00	2,472	77 25	72
Totals	8,831	60 07	9,576	79 14	10,035	74 33	81
The Province	589,592	64 72	1,029,710	111 12	914,852	100 16	65

VALUES—TURNIPS.

TABLE No. XXI.—Showing by County Municipalities and groups of Counties the marketable value of Turnips in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	8,434	57 77	12.667	83 34	15,514	78 75	73
Kent	18,085	70 10	21,972	82 60	27,788	93 56	75
Elgin	24,718	78 47	23,700	98 75	23,185	85 87	91
Norfolk	94,311	82 08	96,943	115 68	82,059	94 87	87
Haldimand	3,750	45 73	4,551	65 01	3,816	56 96	80
Welland	13,010	61 95	18,044	110 70	13,608	87 79	71
Totals	162,308	75 14	177,877	102 88	165,970	89 67	84
Lambton	13,393	59 00	22,627	103 32	15,780	76 23	77
Huron	647,089	98 30	697.446	121 55	669,083	104 35	94
Bruce	484,863	83 60	624,328	118 49	611,804	109 78	76
Totals	1,145,345	90 83	1,344,401	119 76	1,296,667	106 35	85
Grey	873,357	88 80	983,947	118 22	941,382	104 05	85
Simcoe	188,985	59 71	451,724	117 12	324,264	95 43	63
Totals	1,062,342	81 72	1,435,671	117 87	1,265,646	101 70	80
Middlesex	135,470	82 40	172,371	111 49	143,119	90 01	92
Oxford	628,278	123 07	620,355	124 85	566,102	111 83	110
Brant	294,920	100 79	303,745	125 15	302,923	115 84	87
Perth	449,291	96 89	546,498	133 45	457,162	99 77	97
Wellington	1,219,130	95 31	1,681,054	137 31	1,386,761	108 55	88
Waterloo	510,719	97 58	588,356	120 54	505,858	99 48	98
Dufferin	227,413	96 81	214,441	107 11	207,972	91 06	106
Totals	3,465,221	99 90	4,126,820	128 31	3,569,897	105 02	95
Lincoln	16,819	68 09	19,974	92 47	16,563	77 40	88
Wentworth	237,548	87 27	354,722	148 42	292,044	120 93	72
Halton	184,954	100 79	211,887	116 17	184,744	105 27	96
Peel	101,930	68 27	118,911	94 30	99,469	76 22	90
York	276,629	82 72	309,720	109 67	303,658	99 27	83
Ontario	1,112,448	87 93	1,299,640	111 60	1,149,712	95 64	92
Durham	427,898	83 12	624,842	105 00	548,063	99 92	83
Northumberland	255,033	73 01	358,982	105 27	317,455	93 53	78
Prince Edward	5,407	51 99	9,648	91 02	5,868	71 56	73
Totals	2,618,666	84 37	3,308,326	111 66	2,917,576	98 14	86
Lennox and Addington	10,488	65 14	6,281	66 12	9,672	67 64	96
Frontenac	15,928	57 71	45,154	80 92	36,652	80 55	72
Leeds and Grenville	18,442	76 21	16,870	86 51	17,804	89 92	85
Dundas	1,549	51 63	3,444	82 00	2,656	69 89	74
Stormont	3,120	66 38	8,180	86 11	5,596	71 74	93
Glengarry	8,363	103 25	7,195	110 69	5,942	100 71	103
Prescott	11,026	64 48	17,145	127 00	13,835	98 82	65
Russell	43,896	152 42	18,155	84 05	27,236	110 27	138
Carleton	65,877	52 12	151,889	99 01	113,474	79 86	65
Renfrew	30,155	56 05	55,611	90 57	44,320	72 78	77
Lanark	28,537	50 42	51,523	88 83	36,979	75 93	66
Totals	237,381	64 79	381,447	92 38	314,166	81 08	80
Victoria	299,510	80 47	374,336	120 37	312,919	89 38	90
Peterborough	65,597	51 09	122,497	97 37	91,269	75 00	68
Haliburton	18,356	70 06	28,946	103 01	22,705	71 62	98
Hastings	41,396	48 36	82,621	90 49	58,461	74 47	65
Totals	424,859	69 38	608,400	109 39	485,354	83 39	83
Muskoka	82,566	69 32	92,977	85 22	83,364	73 00	95
Parry Sound	34,910	71 54	46,494	86 10	44,635	75 27	95
Algoma	33,372	92 19	54,606	79 95	40,890	75 17	123
Totals	150,848	73 91	194,077	83 87	168,889	74 11	100
The Province	9,266,970	87 99	11,577,019	117 02	10,184,165	99 66	88

VALUES—CORN TO TURNIPS.

TABLE No. XXII.—Showing by County Municipalities and groups of Counties the aggregate marketable value of Corn, Buckwheat, Beans, Hay, Potatoes, Carrots and Turnips in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	1,235,954	17 97	1,294,366	18 07	1,348,895	18 71	96
Kent	1,440,963	16 32	1,603,475	16 87	1,628,996	17 21	95
Elgin	1,116,754	16 16	1,100,569	16 69	1,152,027	16 83	96
Norfolk	852,213	13 29	1,043,887	17 17	963,606	15 46	86
Haldimand	818,700	15 13	783,349	14 83	820,569	15 27	99
Welland	880,918	15 76	819,648	14 09	862,928	15 16	104
Totals	6,345,502	15 85	6,645,294	16 43	6,777,021	16 60	95
Lambton	1,149,770	19 24	880,091	13 56	1,073,695	16 92	114
Huron	2,692,423	24 49	2,137,227	20 12	2,471,427	22 91	107
Bruce	2,256,574	22 52	1,711,168	18 31	2,020,282	21 28	106
Totals	6,098,767	22 60	4,728,486	17 87	5,565,404	20 90	108
Grey	3,062,072	22 72	2,456,508	18 87	2,816,065	21 15	107
Simcoe	1,726,032	20 14	1,732,624	20 60	1,741,295	20 46	98
Totals	4,788,104	21 72	4,189,132	19 55	4,557,360	20 88	104
Middlesex	1,752,888	17 54	1,843,429	17 22	1,880,804	17 81	98
Oxford	1,787,569	23 35	1,774,201	23 22	1,774,152	22 77	103
Brant	890,388	21 02	914,774	22 12	937,215	22 47	94
Perth	1,906,169	24 43	1,537,239	20 70	1,710,314	22 30	110
Wellington	3,139,470	30 41	3,114,870	30 59	3,061,129	30 00	101
Waterloo	1,342,101	26 65	1,419,199	27 37	1,342,021	26 15	102
Dufferin	1,008,103	26 28	666,541	17 63	846,903	21 79	121
Totals	11,826,688	24 19	11,270,253	22 97	11,552,538	23 38	103
Lincoln	827,027	15 96	826,043	15 78	842,579	16 48	97
Wentworth	1,066,824	19 18	1,079,304	19 48	1,151,548	20 72	93
Halton	672,924	17 51	714,820	18 47	743,339	19 25	91
Peel	820,392	18 50	857,278	19 90	826,279	19 00	97
York	1,843,590	21 92	1,583,829	18 67	1,716,331	20 00	110
Ontario	2,232,702	30 51	2,347,555	32 72	2,224,014	30 95	99
Durham	1,285,871	24 08	1,533,751	26 90	1,413,469	25 60	94
Northumberland	1,228,082	17 23	1,441,064	19 28	1,338,250	18 54	93
Prince Edward	560,820	13 34	761,421	15 16	694,983	14 96	89
Totals	10,538,232	20 49	11,145,065	21 10	10,950,792	21 05	97
Lennox and Addington	656,780	10 82	1,000,686	16 90	876,705	15 22	71
Frontenac	722,283	10 41	1,067,061	14 82	957,170	13 56	77
Leeds and Grenville	2,083,560	15 84	1,969,733	14 32	2,177,714	16 51	96
Dundas	864,464	21 46	687,273	17 07	806,837	19 89	108
Stormont	749,573	20 27	618,338	16 57	673,943	18 17	112
Glengarry	988,578	25 20	648,803	17 41	752,771	19 90	127
Prescott	847,234	21 05	658,600	17 63	665,370	17 49	120
Russell	527,692	23 51	307,490	15 20	385,468	17 64	133
Carleton	1,703,518	22 90	1,362,998	18 51	1,472,420	20 08	114
Renfrew	1,272,579	17 70	1,137,909	17 07	1,059,309	15 56	114
Lanark	1,470,271	20 42	1,216,954	16 40	1,334,938	18 26	112
Totals	11,886,532	18 03	10,676,345	16 28	11,162,645	17 17	105
Victoria	1,036,854	21 38	998,255	22 23	985,119	21 01	102
Peterborough	590,705	13 66	807,712	18 69	699,302	15 72	87
Haliburton	206,980	18 87	177,708	15 08	178,481	15 84	119
Hastings	1,290,228	15 96	1,348,410	15 22	1,348,649	16 21	98
Totals	3,124,767	17 03	3,332,085	17 68	3,211,551	17 28	99
Muskoka	581,121	22 13	432,031	16 90	461,106	18 32	121
Parry Sound	219,150	24 76	164,496	16 91	199,223	19 63	126
Algoma	244,984	20 19	180,756	17 41	211,646	18 72	108
Totals	1,045,255	22 12	777,283	17 02	871,975	18 70	118
The Province	55,653,847	19 99	52,763,943	18 90	54,649,286	19 59	102

VALUES OF ALL FIELD CROPS.

TABLES No. XXIII.—Showing by County Municipalities and groups of Counties the total marketable value of all field crops in Ontario in the years 1886 and 1887, with the yearly average for the six years 1882-7; also the average value of produce per acre under crop, and the per cent. ratio of this average in 1887 to that of the six years 1882-7.

Counties.	1887.		1886.		Yearly average for the six years 1882-7.		Per cent. ratio.
	Value.	Value per acre.	Value.	Value per acre.	Value.	Value per acre.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	2,251,466	15 91	2,329,855	16 37	2,405,551	17 08	93
Kent	2,903,747	13 86	3,361,805	15 78	3,381,179	16 42	84
Elgin	2,175,994	12 80	2,531,000	15 54	2,586,912	15 80	81
Norfolk	1,643,108	10 35	2,011,325	13 47	2,116,540	14 17	73
Haldimand	1,665,775	11 86	1,817,520	12 62	1,932,731	13 85	86
Welland	1,440,561	13 04	1,433,525	13 31	1,524,505	13 96	93
Totals	12,080,651	12 98	13,485,030	14 67	13,947,418	15 35	85
Lambton	2,378,254	14 07	2,256,055	13 42	2,523,477	15 26	92
Huron	5,321,616	16 04	5,118,793	15 66	5,784,663	17 59	91
Bruce	4,237,068	15 19	4,063,579	14 77	4,578,646	16 87	90
Totals	11,936,938	15 31	11,438,427	14 86	12,886,786	16 83	91
Grey	5,312,020	15 17	4,989,740	14 24	5,834,130	16 33	93
Simcoe	4,135,907	13 56	4,458,036	15 07	4,854,133	16 39	83
Totals	9,447,927	14 42	9,447,776	14 62	10,688,263	16 36	88
Middlesex	3,955,340	13 49	4,444,041	14 96	4,791,671	16 08	84
Oxford	3,427,144	15 88	3,595,913	17 19	3,798,974	18 00	88
Brant	1,740,466	14 13	1,838,491	15 50	2,080,158	17 55	81
Perth	3,686,766	15 90	3,707,077	16 42	4,108,959	17 79	89
Wellington	5,364,526	17 94	5,552,854	19 25	5,775,008	19 90	90
Waterloo	2,656,269	16 42	2,861,595	17 65	3,086,567	19 18	86
Dufferin	1,974,880	15 87	1,691,712	14 21	1,954,150	16 10	99
Totals	22,805,391	15 73	23,691,683	16 68	25,595,487	17 89	89
Lincoln	1.327,484	12 97	1,421,364	13 86	1,573,558	15 33	85
Wentworth	2,016,102	13 94	2,086,595	14 62	2,442,633	17 28	81
Halton	1,505,068	14 17	1,465,697	13 90	1,760,385	16 58	85
Peel	2,155,365	13 45	2,259,641	14 34	2,613,804	16 55	81
York	4,470,729	14 87	4,436,703	15 30	5,004,043	17 00	87
Ontario	4,209,873	17 22	4,811,255	19 95	4,740,683	19 62	88
Durham	2,864,478	14 47	3,501,790	17 21	3,537,598	17 40	83
Northumberland	2,540,544	11 61	3,047,282	14 07	3,152,217	14 48	80
Prince Edward	1,296,427	9 95	1,593,615	11 98	1,601,687	12 30	81
Totals	22,386,070	13 94	24,623,942	15 46	26,426,608	16 57	84
Lennox and Addington	1,420,762	10 08	1,905,286	13 42	1,926,410	13 38	75
Frontenac	1,201,914	9 20	1,733,173	12 76	1,822,666	12 92	71
Leeds and Grenville	3,057,496	13 18	3,149,258	13 03	3,522,592	14 76	89
Dundas	1,320,409	15 94	1,293,310	15 16	1,450,443	16 96	94
Stormont	1,152,773	16 11	1,067,048	14 64	1,151,896	15 89	101
Glengarry	1,503,775	17 55	1,170,384	13 67	1,343,002	15 83	111
Prescott	1,367,830	15 74	1,261,773	14 97	1,196,483	14 15	111
Russell	826,240	16 28	639,213	12 82	737,158	14 69	111
Carleton	2,961,321	16 48	2,600,466	14 07	2,942,097	16 21	102
Renfrew	2,050,494	12 53	2,214,381	13 53	2,252,505	13 99	90
Lanark	2,112,460	14 57	2,012,528	13 57	2,268,633	15 66	93
Totals	18,975,474	13 85	19,046,820	13 66	20,613,885	14 84	93
Victoria	2,407,968	13 86	2,585,647	15 01	2,672,716	15 50	89
Peterborough	1,451,864	10 51	2,044,458	14 19	1,948,245	13 81	76
Haliburton	285,181	14 53	268,587	13 53	264,529	13 66	106
Hastings	2,314,478	11 19	2,972,119	13 20	3,070,651	13 75	81
Totals	6,459,491	12 00	7,870,811	14 02	7,956,141	14 31	84
Muskoka	717,984	17 67	578,038	14 53	613,720	15 98	111
Parry Sound	298,986	19 07	247,111	14 46	306,208	16 54	115
Algoma	470,957	17 88	334,988	13 68	450,711	17 43	103
Totals	1,487,927	18 00	1,160,137	14 26	1,370,639	16 56	109
The Province	105,579,869	14 25	110,764,626	15 00	119,485,227	16 19	88

VALUES—WOOL.

TABLE No. XXIV.—Showing by County Municipalities and groups of Counties the marketable value of the wool clip in Ontario in the years 1886 and 1887, with the yearly average for the three years 1885-7; also the average value of clip per fleece, and the per cent. ratio of this average in 1887 to that of the three years 1885-7.

Counties.	1887.		1886.		Yearly average for the three years 1885-7.		Per cent. ratio.
	Value.	Value per fleece.	Value.	Value per fleece.	Value.	Value per fleece.	
	$	$ c.	$	$ c.	$	$ c.	
Essex	17,455	1 27	18,287	1 08	16,877	1 10	115
Kent	18,411	1 30	21,612	1 08	21,168	1 10	118
Elgin	23,367	1 28	18,469	1 02	20,647	1 09	117
Norfolk	16,005	1 18	16,697	1 00	16,354	1 02	116
Haldimand	21,400	1 32	20,984	1 18	20,958	1 17	113
Welland	15,900	1 14	14,274	96	15,139	98	116
Totals	112,538	1 25	110,323	1 06	111,143	1 08	116
Lambton	23,981	1 34	24,409	1 13	24,700	1 14	118
Huron	50,895	1 27	50,560	1 05	51,315	1 09	117
Bruce	52,338	1 26	51,648	1 07	51,751	1 10	115
Totals	127,214	1 28	126,617	1 07	127,766	1 10	116
Grey	74,858	1 25	73,520	1 03	74,769	1 07	117
Simcoe	49,056	1 23	52,323	1 05	51,987	1 08	114
Totals	123,914	1 24	125,843	1 04	126,756	1 07	116
Middlesex	35,090	1 36	37,940	1 16	37,314	1 16	117
Oxford	19,169	1 26	19,029	1 09	19,620	1 10	115
Brant	13,388	1 21	14,830	1 06	14,923	1 08	112
Perth	33,581	1 28	34,530	1 07	33,882	1 10	116
Wellington	49,751	1 26	51,881	1 09	51,791	1 11	114
Waterloo	22,301	1 18	23,016	1 02	23,137	1 03	115
Dufferin	19,180	1 27	19,495	1 04	19,885	1 07	119
Totals	192,460	1 27	200,721	1 08	200,552	1 10	115
Lincoln	9,635	1 15	11,275	1 00	10,357	1 02	113
Wentworth	15,436	1 31	16,817	1 07	15,918	1 11	118
Halton	13,958	1 38	13,764	1 17	14,019	1 20	115
Peel	20,841	1 50	21,307	1 22	20,362	1 27	118
York	30,443	1 32	34,704	1 14	33,306	1 16	114
Ontario	28,651	1 38	33,838	1 16	31,356	1 19	116
Durham	23,131	1 25	24,092	1 10	23,426	1 13	111
Northumberland	25,541	1 29	22,657	1 07	24,121	1 11	116
Prince Edward	8,221	1 15	10,341	1 00	9,268	1 01	114
Totals	175,857	1 32	188,795	1 12	182,133	1 15	115
Lennox and Addington	16,436	1 18	19,101	99	16,937	1 02	116
Frontenac	17,928	1 14	19,471	95	18,751	99	115
Leeds and Grenville	32,114	1 07	37,051	92	35,296	94	114
Dundas	10,236	1 14	11,224	95	10,850	97	118
Stormont	11,386	1 23	9,862	96	10,294	1 01	122
Glengarry	13,149	1 05	14,921	91	14,255	91	115
Prescott	9,151	1 12	10,775	92	10,654	94	119
Russell	6,917	1 07	8,977	90	7,869	93	115
Carleton	28,368	1 17	30,560	96	27,953	99	118
Renfrew	34,212	1 02	32,383	86	31,995	87	117
Lanark	33,625	1 08	32,331	92	32,908	94	115
Totals	213,522	1 10	226,656	92	217,762	95	116
Victoria	27,287	1 29	23,018	1 05	24,626	1 09	118
Peterborough	15,587	1 17	16,758	1 00	17,268	1 02	115
Haliburton	2,999	1 10	2,445	92	3,167	93	118
Hastings	24,688	1 10	25,867	92	25,435	95	116
Totals	70,561	1 18	68,088	98	70,496	1 01	116
Muskoka	7,063	1 19	6,321	1 01	6,618	1 04	114
Parry Sound	2,151	1 26	2,267	1 02	2,336	1 05	120
Algoma	4,193	1 32	4,012	1 10	3,848	1 15	115
Totals	13,407	1 24	12,600	1 04	12,802	1 07	116
The Province	1,029,473	1 23	1,059,643	1 03	1,049,410	1 06	116

COST OF GROWING CROPS.

TABLE XXV.—Showing the average cost of growing an acre of the staple farm crops of Ontario and the average value of product, based on the returns of 197 correspondents of the Bureau for the season of 1887.

Schedule of items per acre.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern districts.	The Province.
FALL WHEAT.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 40	3 42	3 09	2 80	3 30	2 27	3 77	2 50	2 95
Cultivating, etc.	1 42	1 00	1 34	1 09	1 06	1 03	1 16	1 25	1 16
Barnyard manure	2 85	2 20	3 53	3 27	4 44	2 53	1 61	3 15	3 15
Manure applied previously	1 36	1 67	1 92	2 45	2 02	1 92	1 92	1 92	1 92
Seed	1 57	1 52	1 48	1 48	1 44	1 52	1 34	1 35	1 49
Sowing or drilling	48	38	39	51	31	52	35	30	42
After fitting or cultivation	40	45	39	54	31	38	22	39	39
Cutting and putting in barn	1 60	1 81	1 75	1 77	1 74	2 06	1 57	2 50	1 89
Threshing	1 17	1 08	90	1 13	97	1 09	1 06	1 00	1 07
Marketing	90	79	90	81	83	95	88	75	85
Wear of implements	37	40	36	36	43	29	31	50	38
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	18 16	17 93	19 10	20 09	21 02	18 04	18 09	17 74	19 43
Value of grain	14 28	12 70	13 56	13 83	15 80	15 34	12 51	16 10	14 13
Value of straw	3 09	2 79	1 77	2 97	3 48	3 22	2 72	2 50	2 95
Total value per acre	17 37	15 49	15 33	16 80	19 28	18 56	15 23	18 60	17 08
Seed sown, bush	1.91	1.79	1.69	1.80	1.73	1.63	1.48	1.50	1.77
Average yield, bush	16.9	15.9	18.0	18.0	20.3	19.3	14.2	20.0	17.8
Manure put on land, tons	9.6	10.4	8.6	8.9	11.9	6.5	9.6	.....	9.8
Per cent. of value charged to crop	43.5	50.8	53.6	46.3	46.5	41.8	50.0	.....	46.4
SPRING WHEAT.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	1 91	2 56	2 17	1 74	1 97	1 88	2 42	2 75	2 04
Cultivating, etc.	82	57	52	77	59	72	67	1 50	70
Barnyard manure	1 62	93	1 34	1 05	1 68	1 43	1 35	1 06	1 34
Manure applied previously	1 40	1 58	1 49	2 03	1 81	2 21	1 73	1 73	1 73
Seed	1 48	1 54	1 44	1 47	1 37	1 54	1 29	1 53	1 45
Sowing or drilling	43	31	39	45	29	47	41	43	39
After fitting or cultivation	36	68	38	43	36	32	25	25	38
Cutting and putting in barn	1 59	1 74	1 63	1 81	1 50	1 77	1 34	1 90	1 65
Threshing	1 29	92	95	1 15	82	1 15	1 06	1 17	1 03
Marketing	73	57	58	80	79	94	58	1 13	77
Wear of implements	29	24	24	25	25	21	28	50	26
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	15 56	14 85	14 18	15 83	15 60	16 12	15 28	16 08	15 50
Value of grain	12 51	6 90	12 11	8 91	11 61	14 34	10 49	12 34	10 95
Value of straw	3 10	1 95	1 57	2 53	3 07	2 98	2 63	3 33	2 66
Total value per acre	15 61	8 85	13 68	11 44	14 68	17 32	13 12	15 67	13 61
Seed sown, bush	1.80	1.77	1.64	1.83	1.66	1.69	1.63	1.88	1.73
Average yield, bush	16.9	9.5	17.2	11.1	13.6	16.7	12.7	16.2	14.2
Manure put on land, tons	7.5	7.0	9.0	9.6	6.6	12.3	9.0	9.0	9.0
Per cent of value charged to crop	50.0	50.0	50.0	51.4	66.9	36.1	50.0	33.3	51.7

NOTE.—In this table the value of manure includes the cost of putting it on the land, and only the estimated quantity consumed as food by plants in the year, whether then or previously applied, is charged against the crop—the last item showing the per cent. as charged when applied to the crop of the year. The cost of marketing an acre's crop is based on the cost of taking it to the usual market place, and the value of the product is based on the average selling price.

TABLE XXV.—COST OF GROWING CROPS.—*Continued.*

Schedule of items per acre.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern districts	The Province.
BARLEY.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 13	2 27	2 12	1 83	1 89	1 63	2 10	3 00	2 00
Cultivating, etc	1 03	72	73	73	63	94	68	2 00	76
Barnyard manure	1 76	97	92	94	1 09	1 30	98	98	98
Manure applied previously	1 44	1 50	1 06	1 62	1 61	2 50	1 54	1 54	1 54
Seed	1 33	1 25	1 08	1 20	1 16	1 31	1 07	1 47	1 21
Sowing or drilling	50	38	39	38	29	45	40	85	39
After fitting or cultivation	41	43	44	50	32	29	18	36	36
Cutting and putting in barn	1 87	1 91	1 56	1 69	1 46	1 77	1 37	2 25	1 67
Threshing	1 11	98	87	98	86	1 49	81	1 17	1 00
Marketing	1 08	93	94	78	82	1 00	84	75	89
Wear of implements	23	23	22	23	31	24	29	38	27
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	16 53	14 78	13 38	14 76	14 61	16 40	14 16	16 88	14 83
Value of grain	14 54	15 98	14 21	16 36	16 64	15 41	15 03	12 47	15 77
Value of straw	3 24	2 28	1 67	2 45	3 17	4 23	3 07	3 13	2 86
Total value per acre	17 78	18 26	15 88	18 81	19 81	19 64	18 10	15 60	18 63
Seed sown, bush	2.20	2.09	1.96	2.00	1.80	2.04	1.78	2.19	1.98
Average yield, bush	24.9	26.6	23.7	25.2	26.2	24.5	21.3	20.7	24.8
Manure put on land, tons	9.0	12.0	11.3	6.7	6.9	7.0	.....	5.0	8.3
Per cent. of value charged to crop	55.1	42.7	50.0	50.0	46.8	50.0	.....	33.3	48.7
OATS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	1 97	2 28	1 94	1 76	1 87	1 56	1 89	2 63	1 91
Cultivating, etc	92	69	63	80	59	78	61	2 00	74
Barnyard manure / Manure applied previously	3 11	2 49	2 40	2 82	3 10	3 72	2 80	2 66	2 80
Seed	86	83	85	83	84	89	77	1 21	85
Sowing or drilling	44	39	37	42	30	48	43	68	40
After fitting or cultivation	37	39	37	37	33	38	18	25	35
Cutting and putting in barn	1 75	1 88	1 62	1 77	1 58	1 73	1 41	1 90	1 70
Threshing	1 23	1 00	84	1 02	85	1 20	81	1 17	1 01
Marketing	1 08	1 01	91	82	85	89	86	75	92
Wear of implements	34	25	31	35	34	22	33	38	34
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	15 71	14 42	13 29	14 84	14 82	15 33	13 99	15 76	14 78
Value of grain	12 39	12 49	12 32	13 21	13 89	13 34	12 93	11 41	12 99
Value of straw	3 45	3 25	2 53	4 03	3 68	4 35	3 03	3 20	3 60
Total value per acre	15 84	15 74	14 85	17 24	17 57	17 69	15 96	14 61	16 59
Seed sown, bush	2.53	2.32	2.33	2.32	2.15	2.48	2.15	2.54	2.34
Average yield, bush	28.6	32.3	32.6	33.8	32.8	31.5	28.5	25.1	31.7

TABLE XXV.—COST OF GROWING CROPS.—*Continued.*

Schedule of items per acre.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern districts.	The Province.
PEASE.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 01	2 17	1 85	1 82	1 89	1 55	1 88	2 80	1 90
Cultivating, etc.	97	71	57	76	59	77	88	2 00	75
Barnyard manure / Manure applied previously	3 11	2 49	2 40	2 82	3 10	3 72	2 80	2 66	2 80
Seed	1 43	1 51	1 24	1 43	1 48	1 38	1 55	1 58	1 44
Sowing or drilling	48	40	37	42	29	50	53	68	41
After fitting or cultivation	33	41	28	40	38	43	20	15	35
Cutting and putting in barn	1 83	1 99	1 77	1 90	1 69	1 87	1 83	2 00	1 84
Threshing	1 27	1 11	83	1 10	1 01	1 22	1 14	1 17	1 10
Marketing	79	88	77	64	91	1 13	89	75	84
Wear of implements	27	41	22	31	26	20	33	38	28
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	16 13	15 29	13 35	15 48	15 77	16 25	15 93	16 30	15 47
Value of grain average	9 29	12 87	12 14	12 09	11 25	12 00	9 89	11 29	11 43
Value of straw	2 80	2 65	1 63	2 11	2 84	2 46	2 56	1 83	2 44
Total value of crop	12 09	15 52	13 77	14 20	14 09	14 46	12 45	13 12	13 87
Seed sown bush.	2 28	2 34	2 44	2 33	2.34	2 26	2 23	2 33	2 32
Average yield "	13.1	20.1	20.4	16.3	16.2	17.4	14.6	16.5	16.5
CORN.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 10	.....	.....	2 50	2 11	.....	.....	.....	2 22
Cultivating, etc	1 58	.....	.....	1 87	95	.....	.....	.....	1 47
Barnyard manure / Manure applied previously	3 11	.....	.....	2 82	3 10	.....	.....	.....	3 01
Seed	29	.....	.....	39	35	.....	.....	.....	33
Sowing or drilling	74	.....	.....	98	81	.....	.....	.....	82
After fitting or cultivation	1 76	.....	.....	2 06	2 58	.....	.....	.....	2 11
Cutting and gathering	2 01	.....	.....	2 48	2 21	.....	.....	.....	2 19
Husking	3 49	.....	.....	2 64	2 77	.....	.....	.....	3 08
Marketing	2 83	.....	.....	1 12	1 66	.....	.....	.....	2 18
Wear of implements	34	.....	.....	25	40	.....	.....	.....	35
Rent, taxes and insurance	3 64	.....	.....	3 88	4 17	.....	.....	.....	3 94
Total cost per acre	21 89	.....	.....	20 99	21 11	.....	.....	.....	21 70
Value of grain	19 91	.....	.....	17 89	20 89	.....	.....	.....	19 82
Value of straw	5 71	.....	.....	6 65	5 87	.....	.....	.....	5 98
Total value of crop	25 62	.....	.....	24 54	26 76	.....	.....	.....	25 80
Seed planted bush.	.36	.....	.....	.52	.31	.....	.....	.....	.38
Average yield bush. (in ear)	79.9	.....	.....	51.8	67.9	.....	.....	.....	72.8

TABLE XXV.—COST OF GROWING CROPS.—*Continued.*

Schedule of items per acre.	Lake Erie.	Lake Huron.	Georgian Bay.	West Midland.	Lake Ontario.	St. Lawrence and Ottawa.	East Midland.	Northern districts.	The Province.
POTATOES.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	2 23	3 21	3 40	2 66	2 41	2 14	2 67	2 95	2 62
Cultivating, etc	1 91	1 38	2 29	1 92	1 09	2 15	2 39	.....	1 79
Barnyard manure	1 75	2 41	3 37	3 69	4 13	2 84	2 09	5 87	3 07
Manure applied previously	1 20	1 82	2 50	1 99	2 92	2 10	1 54	2 01	2 27
Seed	5 95	6 91	6 84	6 47	6 05	6 39	5 63	6 67	6 31
Planting	2 39	3 34	2 74	2 49	2 24	2 36	2 40	3 40	2 54
After fitting or cultivation	1 87	3 31	2 43	2 95	2 66	2 41	3 00	2 75	2 65
Digging and housing	4 12	5 88	4 58	4 77	4 31	5 07	4 57	6 17	4 68
Marketing	3 53	4 72	4 55	4 56	5 32	4 55	6 50	4 00	4 68
Wear of implements	29	23	19	23	28	30	21	50	27
Rent, taxes and insurance	3 64	3 21	3 05	3 88	4 17	3 48	3 90	2 13	3 76
Total cost per acre	28 88	36 42	35 94	35 61	35 58	33 79	34 90	36 45	34 64
Value of product	45 41	56 43	46 16	57 59	55 26	59 98	54 30	76 60	54 43
Seed planted ....bush.	9 10	13 61	14 00	10 56	10 21	14 32	11 71	15 20	11 52
Average yield .... "	79.1	98.4	101.4	136.0	93.4	108.7	98.5	198.7	105.9
Manure put on land....tons	12.9	12.6	15.5	12.5	12.2	18.6	16.0	10.0	13.8
Per cent. of value charged to crop	47.5	38.0	49.1	49.9	48.8	30.7	42.4	50.6	44.9
TURNIPS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Plowing	.....	3 94	3 51	3 21	2 88	.....	.....	.....	3 25
Cultivating, etc	.....	1 88	2 52	2 13	1 27	.....	.....	.....	1 86
Barnyard manure	.....	3 82	4 61	5 28	5 72	.....	.....	.....	5 08
Manure applied previously	.....	2 19	2 19	2 51	1 87	.....	.....	.....	2 19
Seed	.....	48	43	52	63	.....	.....	.....	53
Sowing or drilling	.....	1 30	94	1 01	99	.....	.....	.....	1 04
After fitting or cultivation	.....	3 75	2 50	3 31	3 59	.....	.....	.....	3 32
Pulling and housing	.....	5 70	3 71	3 74	4 74	.....	.....	.....	4 36
Marketing	.....	8 15	6 00	9 30	6 29	.....	.....	.....	7 53
Wear of implements	.....	25	20	59	47	.....	.....	.....	43
Rent, taxes and insurance	.....	3 21	3 05	3 88	4 17	.....	.....	.....	3 82
	.....	34 67	29 66	35 48	32 62	.....	.....	.....	33 41
Value of roots	.....	41 32	36 13	42 60	38 95	.....	.....	.....	39 94
Value of tops	.....	1 33	1 00	1 33	1 50	.....	.....	.....	1 33
	.....	42 65	37 13	43 93	40 45	.....	.....	.....	41 27
Seed sown....lb.	.....	2 08	1 88	2 60	2 50	.....	.....	.....	2 37
Average yield....bush.	.....	388.0	316.1	450.8	326.6	.....	.....	.....	387.3
Manure put on land....tons	.....	19.6	18.5	13.1	13.6	.....	.....	.....	15.3
Per cent. of value charged to crop	.....	50.3	57.8	57.1	52.9	.....	.....	.....	54.5

FARM WAGES.

TABLE No. XXVI.—Showing by County Municipalities and groups of Counties the average Wages of Farm Laborers and Domestic Servants in Ontario in 1887, and the average for the six years 1882-7.

Counties.	Farm laborers.								Domestics with board.	
	Per year.				Per month.					
	With board.		Without board.		With board.		Without board.		1887. Per month.	1882-6. Per week.
	1887.	1882-7.	1887.	1882-7.	1887.	1882-7.	1887.	1882-7.		
	$	$	$	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Essex	163	161	256	254	16 92	17 60	26 13	27 20	6 21	1 59
Kent	158	172	242	265	17 11	18 36	25 61	27 08	6 16	1 55
Elgin	162	169	241	250	17 18	18 26	26 44	27 30	6 36	1 55
Norfolk	148	156	226	238	15 32	16 46	23 25	24 37	5 50	1 39
Haldimand	149	156	243	241	17 11	17 74	26 68	27 07	5 86	1 44
Welland	144	147	245	244	16 64	16 88	26 30	27 18	6 12	1 39
Group	154	161	241	249	16 72	17 73	25 64	26 68	6 02	1 49
Lambton	162	170	254	268	17 31	18 30	27 21	28 05	6 41	1 55
Huron	158	165	256	258	17 00	18 19	26 61	27 74	5 79	1 49
Bruce	158	162	254	254	17 33	18 31	27 24	27 65	5 64	1 45
Group	159	165	255	259	17 19	18 27	27 00	27 85	5 88	1 49
Grey	153	158	248	245	16 76	17 75	25 56	26 94	5 78	1 39
Simcoe	158	164	260	265	17 15	18 56	26 74	28 49	5 83	1 52
Group	155	161	254	256	16 95	18 23	26 17	27 80	5 82	1 44
Middlesex	159	167	245	251	16 81	18 65	24 92	27 35	6 22	1 57
Oxford	164	166	243	251	16 48	17 26	24 94	26 08	6 30	1 59
Brant	156	162	259	247	16 00	17 43	25 50	26 03	6 30	1 58
Perth	160	165	259	259	17 54	18 99	27 21	29 04	6 09	1 56
Wellington	160	164	255	259	16 86	17 73	26 82	27 55	6 16	1 54
Waterloo	154	156	254	252	17 18	17 66	26 95	26 68	6 12	1 47
Dufferin	155	156	244	252	16 93	17 89	26 35	27 88	5 87	1 46
Group	159	163	251	253	16 82	17 95	25 92	27 07	6 17	1 54
Lincoln	156	159	254	246	17 67	17 80	26 17	26 25	6 12	1 45
Wentworth	160	158	249	253	16 59	17 64	26 39	27 27	6 62	1 53
Halton	170	170	271	268	17 82	18 52	27 16	28 07	7 09	1 68
Peel	168	179	259	266	17 63	18 73	26 93	28 56	6 95	1 76
York	169	171	269	265	16 85	18 12	25 73	28 07	6 30	1 59
Ontario	166	169	244	262	16 12	17 98	26 11	28 04	6 02	1 50
Durham	157	165	257	250	17 73	17 46	26 09	26 37	5 79	1 57
Northumberland	153	157	232	245	16 31	17 13	24 54	25 89	6 00	1 53
Prince Edward	140	152	224	227	15 76	16 84	22 91	24 09	5 72	1 41
Group	162	165	253	253	16 79	17 84	25 81	26 99	6 30	1 56
Lennox and Add	148	156	224	238	15 66	16 94	22 38	25 81	5 49	1 54
Frontenac	148	154	238	249	16 00	17 77	24 41	26 74	6 50	1 47
Leeds and Gren.	158	166	251	254	17 18	18 45	25 19	26 82	6 27	1 51
Dundas	168	161	254	239	17 61	17 78	26 76	27 95	6 05	1 68
Stormont	155	167	236	239	16 69	18 83	25 30	28 01	6 08	1 52
Glengarry	149	163	264	252	16 98	18 71	26 30	28 18	5 79	1 60
Prescott	160	166	255	263	17 65	19 19	26 20	28 35	6 13	1 42
Russell	153	170	256	255	16 88	18 93	25 67	27 55	5 00	1 36
Carleton	164	166	271	259	17 39	17 85	26 52	27 76	6 46	1 63
Renfrew	165	173	247	269	17 03	18 31	26 66	27 94	5 46	1 39
Lanark	172	176	267	270	17 48	18 81	27 31	27 83	6 34	1 66
Group	158	165	249	252	16 98	18 39	25 52	27 15	6 00	1 52
Victoria	166	169	257	255	16 26	18 05	25 30	27 48	5 96	1 57
Peterborough	165	172	262	264	16 86	18 67	28 15	28 03	6 01	1 58
Haliburton	155	165	252	264	17 50	18 68	27 63	28 94	5 23	1 31
Hastings	154	162	252	253	16 55	17 50	26 25	26 15	5 49	1 44
Group	161	167	256	257	16 63	18 13	26 81	27 43	5 73	1 52
Muskoka	171	171	259	276	18 01	19 51	27 21	29 39	5 77	1 48
Parry Sound	174	175	261	273	18 85	19 48	27 57	29 85	6 32	1 46
Algoma	177	177	271	279	18 80	20 79	26 55	30 51	6 32	1 52
Group	173	175	262	276	18 31	19 81	27 10	29 82	6 05	1 49
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ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO,

1887.

PART IV.—WAGES AND COST OF LIVING.

Printed by Order of the Legislative Assembly.

TORONTO:
PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.
1888.

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SIXTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

PART IV.

To the Honorable Charles Drury, Minister of Agriculture:

Sir,—I have the honor to submit herewith a report on the Wages and Cost of Living of the working classes in the towns and cities of Ontario, being Part IV of the report of the Bureau of Industries for 1887.

Your obedient servant,

A. BLUE, Secretary.

PART IV.

LABOR, WAGES AND COST OF LIVING.

STATISTICS OF URBAN WAGE-EARNERS.

The statistics of this Part of the report are not as complete this year as in former years, the information having been collected from the wage-earning class only. In previous reports the rates of wages per week were given as furnished by the employers of labor, and average rates of wages were computed from data furnished by employers and employés. But in consequence of an unusual pressure of work in the Bureau during the latter part of last year it was not found possible to send out an experienced collector for this service, and it was not deemed expedient to make the attempt at a late period of the season with untried or unknown officers. This applies, however, to the weekly wage returns, and wherever comparisons are made with the statistics of former years they refer to those compiled from the returns of wage-earners alone. The more valuable statistics, relating to time employed, wages earned and cost of living for the year, are computed in all cases in this as in former reports from data furnished by the working classes, collected by persons specially employed for that service in the principal industrial centres of the province.* The following table shows the number of wage-earners whose returns have been tabulated as regards weekly wages for the present report, as well as for the reports of the three preceding years, classified as male and female and over and under 16 years of age :

Year.	Males.		Females.		Total.
	Over 16 years.	Under 16 years.	Over 16 years.	Under 16 years.	
1887	2,909	37	322	10	3,278
1886	2,453	29	241	21	2,744
1885	2,384	65	345	17	2,811
1884	2,295	56	264	22	2,637

The number of males over 16 years in 1887 is largely in excess of the number for any other year, and the number of females is greater than for any other year excepting 1885 ; but the number for workers under 16 continues almost too low for much value in the computing of averages. The total number of returns is 534 more than in 1886, and 467 more than in 1885.

* Statistics of the wages of farm laborers are given in Part III.

A General Comparison.—The following table presents a general comparison of the weekly earnings and the hours employed weekly for all workers making returns in 1885, 1886 and 1887, classified as males and females over and under 16 years:

Classes.	1887.			1886.			1885.		
	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hour.
	$ c.		cts.	$ c.		cts.	$ c.		cts.
Males over 16	9 18	58.88	15.59	9 09	58.07	15.65	9 00	58.72	15.32
Males under 16	3 11	56.41	5.51	2 84	58.86	4.83	2 86	61.43	4.69
Females over 16	4 58	57.21	8.01	4 29	58.21	7.37	4 26	59.06	7.21
Females under 16	2 06	55.30	3.73	2 60	59.67	4.36	2 79	57.65	4.84
All classes	8 63	58.68	14.71	8 55	58.18	14.70	8 23	58.82	13.99

The average for all classes in 1884 was $8.14 for 57.17 hours, or 14.24 cents per hour. For all classes the rate per hour in 1887 is almost the same as in 1886; but an increase of half an hour in the week brings an increase of 8 cents in the wages over 1886, and 24 cents over the average full week's pay for the four years. In the class of males over 16 years, computed from nearly 3,000 returns, the average weekly wage is 9 cents more in 1887 than in 1886, and 9 cents more in 1886 than in 1885, but the increase of 1887 is due in part to longer hours of work—the rate per hour being less than in 1886. Females over 16 have a steadily increasing wage with a steadily decreasing number of working hours.

Leading Trades Compared.—In the following table we continue the comparison of the five trades as selected in previous years, showing the hours of employment and wages earned in the last full week in the year:

Occupations.	1887.			1886.			1885.			1884.		
	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hour.	Wages.	Hours employed.	Wages per hour.
	$ c.		cts.	$ c.		cts.	$ c.		cts.	$ c.		cts.
Blacksmith	9 82	58.88	16.68	9 93	58.25	17.05	9 74	59.15	16.46	9 76	58.21	17.05
Carpenter	9 82	52.87	18.58	9 61	57.38	16.75	9 97	58.98	16.90	9 98	59.07	16.90
Machinist	9 65	56.93	16.95	9 83	59.62	16.49	10 16	59.14	17.18	10 08	59.17	17.03
Moulder	12 19	57.89	21.06	12 05	57.33	21.02	11 76	59.15	19.90	11 55	58.75	19.66
Painter	9 78	57.77	16.93	9 53	56.32	16.92	9 54	57.29	16.65	9 72	59.19	16.42
Average of the five trades.	10 04	56.17	17.87	10 22	57.81	17.68	10 26	58.94	17.41	10 30	58.95	17.47

Here it will be seen that with the single exception of blacksmiths there has been a slight increase per hour all around, the most noticeable being in the case of carpenters

who have an increase of nearly two cents. This only slightly increases the wages for the week however, as the weekly time has been reduced by 4½ hours. If we take an average week for the four years we find that blacksmiths earn $9.81 in 58.62, hours or 16.73 cents per hour; carpenters, $9.84 in 57.07 hours, or 17.24 cents per hour; machinists, $9.93 in 58.71 hours, or 16.91 cents per hour; moulders, $11.89 in 58.28 hours, or 20.40 cents per hour; painters, $9.64 in 57.64 hours, or 16.72 cents per hour; while the average of the five trades in proportion to the returns is $10.20 in 57.97 hours, or 17.60 cents per hour. So that the rates per hour in 1887 exceed the average of the four years in all of these trades with the exception of blacksmith. No moulders or machinists have reported from Toronto in 1887.

WEEKLY WAGES.—Table I is prepared from returns received from 3,278 workpeople in 20 cities and towns in Ontario, and it gives for each occupation and sub-occupation enumerated a statement of the average time employed and wages earned for a full week in the last three months of 1887. The sex and age of the workers are designated. The number of occupations represented is 233 as against 402 in 1886 when employers of labor also furnished returns. The following table gives like information in regard to only those industries enumerated in Table I as are there divided into sub-occupations, and the averages are computed from the total returns for each industry, irrespective of class. Foremen are taken separately, and are not included in the averages for the several industries.

Industries.	Wages.	Hours employed.	Industries.	Wages.	Hours employed.
	$ c.			$ c.	
Axe factory	9 33	54.09	Organ factory	10 56	58.55
Bookbindery	6 24	54.45	Paper mills	4 67	54.51
Boot and shoe factory	8 12	55.86	Piano factory	10 93	57.48
Carriage works	9 26	58.73	Railway (road)	10 59	64.25
Cigar factory	6 42	50.57	Railway (shop)	9 17	59.03
Cotton mills	7 10	60.13	Saw works	10 28	58.00
Foremen	14 98	58.79	Stove foundry	9 22	58.78
Furniture factory	9 53	56.14	Tailor shop	8 10	57.67
Knitting mills	6 79	60.00	Tannery	8 66	60.22
Lumber mills	8 97	65.83	Woollen mills	5 32	59.36

In this table workmen in lumber mills are shown to work the longest hours of any, the average for this class reaching nearly 66 hours weekly. Next to these come railway employés, working on the road, and the last named class, with workmen in piano and organ factories and in saw works, receive the highest wages, averaging over $10 weekly in each case. These are all industries in which male hands are employed exclusively; and the average of the wages earned in several of the other industries, as for instance, cotton and woollen mills and bookbinderies is materially reduced by the fact that a large number of female operatives are employed in those industries.

YEARLY WAGES AND COST OF LIVING.—In Table II are given statistics of the yearly earnings, time employed, number of dependents, cost of living, etc., of workers engaged in the various occupations and sub-occupations enumerated in 20 cities and towns in Ontario, based on returns obtained from 3,354 working people in those places. The following table gives the same statistics under the same heads, but only for those industries which in the main table are divided into their sub-occupations, and the averages are here made up from the total returns received.

Industries.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
	Total.	Under 16.	Hours per week.	Days in year.	Wages from occupation.	Extra.	Wife and minor children's earnings.	Total.	
					$ c.	$ c.	$ c.	$ c.	$ c.
Axe factory	2.29	1.65	54.37	245.62	396 72	.....	3 00	399 72	352 32
Bookbindery	1.05	0.71	54.46	263.66	281 31	7 19	.....	288 50	271 88
Boot and shoe factory	1.62	0.92	55.92	281.69	388 69	15 38	15 39	419 46	351 85
Carriage works	2.23	1.29	58.98	262.48	406 44	12 58	9 13	428 15	357 31
Cigar factory	1.17	0.74	50.22	283.35	297 10	4 89	2 17	304 16	270 04
Cotton mills	1.20	0.73	60.09	273.68	318 44	7 54	21 21	347 19	287 51
Foremen	4.00	2.81	58.86	294.98	725 17	3 04	10 34	738 55	535 06
Furniture factory	2.51	1.58	55.87	270.32	434 08	11 57	7 16	452 81	383 77
Knitting mills	1.34	0.81	60.00	305.42	349 31	.....	.....	349 31	275 82
Lumber mills	3.35	2.35	65.83	207.93	305 41	7 97	17 65	331 03	337 63
Organ factory	2.20	1.40	58.50	287.95	495 00	12 75	.....	507 75	440 95
Paper mills	0.27	0.12	54.70	296.91	231 86	0 64	.....	232 50	218 45
Piano factory	1.70	1.07	57.80	272.70	486 59	8 33	.....	494 92	423 39
Railway (road)	1.90	1.20	64.46	308.67	524 13	5 80	3 91	533 84	385 94
Railway (shop)	2.25	1.34	58.22	277.50	420 74	4 03	5 63	430 40	395 81
Saw works	2.56	1.75	58.00	275.56	468 72	14 25	20 62	503 59	471 69
Stove foundry	2.64	1.48	59.30	236.76	369 65	6 04	2 00	377 69	366 66
Tailor shop	1.24	0.81	57.90	256.05	329 32	6 01	0 61	335 93	303 76
Tannery	3.83	2.48	60.22	292.13	406 96	4 34	.....	411 31	411 70
Woollen mills	0.44	0.28	59.48	298.85	263 68	0 79	1 42	265 89	214 34

In this table it is seen that aside from foremen the highest yearly earnings are made by workmen in saw works, piano and organ factories, and by road men employed on railways—the same classes who in the former table of weekly averages were shown to be in receipt of the highest wages. Next to these in point of highest average earnings come workmen in furniture factories. The lowest averages are made in those industries which employ females in part. There is considerable variation in the average yearly duration of employment for each occupation, operatives in knitting mills showing the highest average, and workers in lumber mills the lowest. This last named class of workers, notwithstanding the fact of their low average of days employed in the year, yet show the highest average number of hours of employment per week, indicating that the employ-

ment is not very constant, but entails long hours in comparison with other occupations, while the engagement lasts.

RETURNS BY TOWNS AND CITIES.

The returns for each of the cities and towns embraced in Table II have been tabulated separately, but showing only the aggregates and averages for each class by sex and age, with and without dependents.

ALMONTE.—The statistics for this town are compiled from the returns from 301 workers of all classes.*

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents.	m.o.	agg.	81	4,862	25,061	42,371	200	400	42,971	32,056	10,915
		av.	....	60.25	309.40	523.10	2.47	4.94	530.51	395.75	134.76
	f.o.	agg.	2	120	626	534	....	.....	534	475	59
		av.	....	60.00	313.00	267.00	....	.....	267.00	237.50	29.50
Without dependents.	m.o.	agg.	123	7,362	38,281	36,481	....	.....	36,481	26,272	10,209
		av.	....	59.85	311.23	296.59	....	.....	296.59	213.59	83.00
	m.u.	agg.	12	720	3,727	1,913	....	.....	1,913	1,849	64
		av.	....	60.00	310.58	159.42	....	.....	159.42	154.08	5.34
	f.o.	agg.	83	4,920	25,453	21,726	....	.....	21,726	15,957	5,769
		av.	....	50.28	306.66	261.76	....	.....	261.76	192.25	69.51
All classes.....		agg.	301	17,984	93,148	103,025	200	400	103,625	76,609	27,016
		av.	....	59.75	309.46	342.28	.66	1.33	344.27	254.52	89.75

These returns indicate that employment has been exceptionally steady, as is shown by the high average of 309.46 days work for the year as compared with 273.75 in 1886, and 270 in 1885. It is to be noted, however, that the investigation not only covers a much wider field than in 1886—as that year's report only included returns from 126 workers—but embraces a much larger proportion of the classes without dependents. While in 1886 those with dependents constituted 49 per cent. of the aggregate, they are only 27½ per cent. of the aggregate from whose schedules the above table has been made up. In 1886, the average earnings of all classes, including the extra amounts and earnings of wife and children, were $319.23, the cost of living $266.98, and the surplus $52.25. The total earnings in 1885 were $315.40, cost of living $249.31 and surplus $66.09. A comparison of the earnings of males with dependents in 1886 and 1887, the numbers being respectively 62 and 81, shows a very considerable increase, the average having risen from $430.76 to $530.51. The surplus of this class has risen from $51.11 to $134.76; in 1885 it was $61.10.

* The initials m. o., m. u., f. o. and f. u. in this and following tables are used to designate males and females *over* or *under* 16 years of age. The number of dependents in each table is exclusive of the worker.

BELLEVILLE.—The returns for this city include the statements furnished by 82 wage-earners, 55 of whom are males with dependents.

Classes by sex and age.			No of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents.	m.o.	agg...	55	3,176	15,815	27,210	1,000	1,340	29,550	23,735	5,815
		av....	....	57.75	287.55	494.73	18.18	24.36	537.27	431.55	105.72
Without dependents.	m.o.	agg...	20	1,214	5,835	7,300	.....	.....	7,300	5,450	1,850
		av....	....	60.70	291.75	365.00	.....	.... .	365.00	272.50	92.50
	f.o.	agg...	7	396	2,055	1,230	.....	.....	1,230	1,180	50
		av....	....	56.57	293.57	175.71	.....	. ...	175.71	168.57	7.14
All classes.....		agg...	82	4,786	23,705	35,740	1,000	1,340	38,080	30,365	7,715
		av. ...	....	58.37	289.09	435.85	12.20	16.34	464.39	370.30	94.09

The variation between the average number of days employment in the year and the total earnings as compared with 1886 is comparatively trifling, yet the surplus is considerably larger. In 1886 the average number of days employment was 283.15 and the average total earnings $468.40—as against 289.09 days and $464.39 in 1887. The expenses of living, however, are given at $370.30 for the latter year as compared with $412.54 in 1886, and the surplus in consequence stands at $94.09, as against $55.86—an increase of $40.23. The hours of labor per week show a reduction from 60.56 to 58.37. In 1885 the number of days employment was only 255.38, total earnings $423.71, cost of living $362.78, and surplus $60.93.

BROCKVILLE.—Returns for 184 workers have been received from this town, all of whom are males over 16 years of age, the majority of them with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents.	m.o.	agg....	102	6,228	26,449	45,566	1,335	415	47,316	41,683	5,633
		av.....	....	61.06	259.30	446.72	13.09	4.07	463.88	408.65	55.23
Without dependents.	m.o.	agg....	82	4,928	22,541	30,392	840	.....	31,232	23,871	7,361
		av.	....	60.10	274.89	370.63	10.25	... ..	380.88	291.11	89.77
All classes		agg....	184	11,156	48,990	75,958	2,175	415	78,548	65,554	12,994
		av.....	...	60.63	266.25	412.81	11.82	2.26	426.89	356.27	70.62

A comparison of these statistics with those of 1886 shows an increase of 2.97 in the average number of hours employed during the week, and a decrease of 5.92 days in the time employed during the whole year. The wages from occupation are larger by $42.58, but the extra earnings and the amount derived from the work of wives and children is less by $6.46 and $32.53 has been added to the cost of living, though this still leaves $3.59 more of a surplus. Some of these differences may be accounted for in that the statistics for the past year do not, unfortunately, include anything regarding female workers, whereas in the year previous returns were made for as many as forty. In 1885

the average number of days employed was 294.81, and the surplus earnings to each worker amounted to $71.76.

Carleton Place.—There are returns from 106 employés of this town, 54 of them being males with dependents.

Classes by sex and age.			No of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents	m.o.	agg.	54	3,234	14,787	22,202	273	1,190	23,665	23,225	440
		av.	....	59.89	273.83	411.15	5.05	22.04	438.24	430.09	8.15
Without dependents	m.o.	agg.	41	2,429	10,871	13,734	49	.....	13,783	11,276	2,507
		av.	....	59.24	265.15	334.98	1.19	.....	336.17	275.02	61.15
	m.u.	agg.	2	114	600	334	.....	.....	334	300	34
		av.	....	57.00	300.00	167.00	.....	.....	167.00	150.00	17.00
	f.o.	agg.	9	510	2,514	2,054	.....	.....	2,054	1,694	360
		av.	....	56.67	279.33	228.22	.....	.....	228.22	188.22	40.00
All classes		agg.	106	6,287	28,772	38,324	322	1,190	39,836	36,495	3,341
		av.	....	59.31	271.43	361.55	3.04	11.22	375.81	344.29	31.52

As Carleton Place furnished no returns for the last report no comparison with the condition of affairs in 1886 can be presented. It will be seen that the living expenses of those with dependents approximate very closely to the total earnings, leaving only an average surplus of $8.15, which but for the earnings of wife and and minor children—an average of $22.04—would be a deficit of $13.89.

Chatham.—The statistics for the town of Chatham are supplied by 217 workers, of whom 161 are males having dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
						$	$	$	$	$	$
With dependents	m.o.	agg.	161	9,748	41,757	68,971	2,934	1,164	73,069	64,596	8,473
		av.	....	60.55	259.36	428.39	18.22	7.23	453.84	401.21	52.63
	f.o.	agg.	1	63	288	144	50	.....	194	208	-14
		av.	....	63.00	288.00	144.00	50.00	.....	194.00	208.00	-14.00
Without dependents	m.o.	agg.	42	2,543	11,110	14,184	464	.....	14,648	10,378	4,270
		av.	....	60.55	264.52	337.71	11.05	.....	348.76	247.09	101.67
	m.u.	agg.	1	59	162	97	.....	.....	97	97	.....
		av.	....	59.00	162.00	97.00	.....	....	97.00	97.00	.....
	f.o.	agg.	11	651	2,731	1,822	.....	.....	1,822	1,807	15
		av.	....	59.18	248.27	165.64	.....	.....	165.64	164.27	1.37
	f.u.	agg.	1	60	275	137	....	.....	137	137	.....
		av.	....	60.00	275.00	137.00	.....	.....	137.00	137.00	.....
All classes		agg.	217	13,124	56,323	85,355	3,448	1,164	89,967	77,223	12,744
		av.	....	60.48	259.55	393.34	15.89	5.36	414.59	355.86	58.73

There is less change noticeable in industrial conditions here than in any other place from which returns have been furnished. The figures showing the number of hours worked per week approximate very closely to those of the two preceding years Though the average number of days worked per year is 9 less than in 1886, and 15 less than in 1885, the total earnings are almost the same for the three years. The cost of living during 1886 was somewhat less than in either the preceding or the following year, so that the surplus of $57.83 in 1885 rose to $75.45 in 1886 and dropped again to $58.73 in 1887.

CORNWALL.—The table for this town is compiled from the data furnished by 69 workers, 37 of whom are males with dependents.

Classes by sex and age.		No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor childrens' earnings.	Total earnings.	Cost of living.	Surplus.
					$	$	$	$	$	$
With dependents .m.o.	agg...	37	2,315	9,642	13,334	470	1,294	15,098	12,711	2,387
	av	....	62.57	260.59	360.38	12.70	34.97	408.05	343.54	64.51
Without dependents. m.o.	agg...	19	1,211	5,229	7,047	.....	.....	7,047	4,935	2,112
	av	....	63.74	275.21	370.90	.....	.....	370.90	259.74	111.16
Without dependents. f.o.	agg...	13	795	3,381	2,644	.....	.... .	2,644	2,203	441
	av	....	61.15	260.08	203.38	.....	.....	203.38	169.46	33.92
All classes.....	agg...	69	4,321	18,252	23,025	470	1,294	24,789	19,849	4,940
	av	....	62.62	264.52	333.70	6.81	18.75	359.26	287.67	71.59

This shows an unusually large proportion of the total earnings of those with dependents under the head of "earnings of wife and minor children," the average being $34.97 or rather more than 10 per cent. of the average living expenses. The number of hours worked per week, 62.62, is also considerably in excess of the general average. No statistics were obtained from Cornwall last year, but a comparison with 1885 shows that this condition of affairs is apparently normal. In that year the earnings of wife and children —$35.71—exactly equalled the surplus. The number of days employment in the year was 10½ more in 1885 than last year, and the time per week about 2 hours less.

GALT.—The returns for Galt are furnished by 55 male employés, 31 of whom have dependents.

Classes by sex and age.		No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
					$	$	$	$	$	$
With dependents .m.o.	agg...	31	1,848	8,025	13,313	215	425	13,953	12,468	1,485
	av	....	59.61	258.87	429.45	6.94	13.71	450.10	402.20	47.90
Without dependents. m.o.	agg. .	24	1,423	6,139	8,823	69	.....	8,892	6,242	2,650
	av	....	59.29	255.79	367.63	2.87	.....	370.50	260.08	110.42
All classes.....	agg...	55	3,271	14,164	22,136	284	425	22,845	18,710	4,135
	av	....	59.47	257.53	402.47	5.16	7.73	415.36	340.18	75.18

The time of labor per week has increased by about one hour as compared with 1885 and 1886. The number of days employment in the year has fallen off by about 14½ days

in comparison with the latter year. Total earnings are less by $28.50, but the surplus, owing to the decreased cost of living, is a little increased, having risen from $71.72 to $75.18. In 1885 it was $89.85.

GANANOQUE.—This town furnishes 30 statements of employés, two-thirds of the number being males with dependents.

Classes by sex and age.		No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
					$	$	$	$	$	$
With dependents, m. o.	agg...	20	1,168	5,444	9,040	350	310	9,700	8,028	1,672
	av....	....	58.40	272.20	452.00	17.50	15.50	485.00	401.40	83.60
Without dependents. m.o.	agg...	10	590	2,480	3,488	25	.....	3,513	2,571	942
	av....	....	59.00	248.00	348.80	2.50	.....	351.30	257.10	94.20
All classes.....	agg...	30	1,758	7,924	12,528	375	310	13,213	10,599	2,614
	av....	....	58.60	264.13	417.60	12.50	10.33	440.43	353.30	87.13

There is a decrease of one hour in the weekly hours of labor as compared with 1886, but the time worked is still nearly 2½ hours in excess of that for 1885. The number of days worked per year is 11 less than in 1885, and about the same as last year. Total earnings show an advance of $6.88 as compared with 1886 and are $26.38 in excess of the figures for 1885. The cost of living has, however, augmented in a greater proportion, being about $40 in excess of the two previous years, so that the surplus is $31.51 less than in 1886, and $17.59 under the surplus for 1885.

GUELPH.—The returns for this city are based on the statements supplied by 227 workers, 144 being males with dependents.

Classes by sex and age.		No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
					$	$	$	$	$	$
With dependents, m. o.	agg...	144	8,082	39,660	59,081	740	1,966	61,787	56,912	4,875
	av....	....	56.13	275.42	410.29	5.14	13.65	429.08	395.22	33.86
Without dependents. m.o.	agg...	75	4,192	20,669	21,566	197	.....	21,763	16,763	5,000
	av....	....	55.89	275.59	287.55	2.63	.....	290.18	223.51	66.67
m.u.	agg...	1	54	270	140	.....	.....	140	140	.....
	av....	....	54.00	270.00	140.00	.....	.....	140.00	140.00	.....
f.o.	agg...	7	398	1,956	907	.....	....	907	805	102
	av....	....	56.86	279.43	129.57	.....	.....	129.57	115.00	14.57
All classes.....	agg...	227	12,726	62,555	81,694	937	1,966	84,597	74,620	9,977
	av....	....	56.06	275.57	359.88	4.13	8.66	372.67	328.72	43.95

As compared with the figures for 1886 the changes to be noted are unfavorable, except as regards the hours of labor per week, where an average decrease of over half an hour is shown. The number of days employment per year shows a decrease from 279.12 to 275.57.

In 1885 it was 266. The average total earnings of all classes have diminished from $416.63 to $372.67, and the surplus from $52.51 to $43.95. This may be partly due to the fact that the returns for 1887 cover a more extended field, including some classes not represented in last report, but a comparison by classes indicates that it cannot altogether be thus accounted for. The surplus of the males with dependents has decreased from $35.17 to $33.86, although the earnings of wife and children have risen from $7.29 to $13.65. There is a slight diminution in earnings and surplus of all classes as compared with 1885.

HAMILTON.—The returns from this city in 1886 included 175 workers, which, as was mentioned in last report, was a very small number considering the interest taken in the various labor organizations there. But during the past year still greater difficulty has been experienced and the collectors, who, we have every reason to believe, have done all within their power, have succeeded in obtaining only 122 schedules containing sufficient data to admit of their being tabulated. The aggregates and averages, computed from the different returns received, are shown in the following table :

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
						$	$	$	$	$	$
With dependents.	m.o.	agg.	92	5,252	21,608	35,625	563	2,056	38,244	38,771	-527
		av.	....	57.09	234.87	387.23	6.12	22.35	415.70	421.43	-5.73
Without dependents.	m.o.	agg.	29	1,623	6,971	10,138	2	.....	10,140	8,304	1,836
		av.	....	55.97	240.38	349.59	.07	.....	349.66	286.35	63.31
	f.o.	agg.	1	60	300	250	....	.....	250	250	.....
		av.	....	60.00	300.00	250.00	....	....	250.00	250.00	.... .
All classes.		agg.	122	6,935	28,879	46,013	565	2,056	48,634	47,325	1,309
		av.	....	56.84	236.71	377.16	4.63	16.85	398.64	387.91	10.73

Of the 122 workers reported, 75.4 per cent. are males over 16 years of age with dependents, and only one female worker is included in the number. Among the male workers with dependents the average number of working hours daily has been slightly increased, and employment was given them for 234.87 days as compared with 216.96 in 1886. But on the other hand the average of yearly wages received by these men from occupations was less by $34.10 and though it is true that the amount gained by subsidiary methods was slightly augmented and the cost of living somewhat less, yet these advantages were not sufficient to make ends meet, and an average deficit of $5.73 per worker has been the result. This deplorable termination of the year's work presents a striking contrast with the result in the year 1886, when there was an average surplus of $24.36 to each man in the same position. We find, however, a better condition of affairs in the case of men without dependents. The hours of labor were shorter and the employment has apparently been more steady ; and though the average total earnings for the year were considerably less than for men with dependents, yet the cost of living being so much less, they have been able to show an average surplus of $63.31 per workman, a sum which is $10.62 in advance of the previous year's. As only one female worker has been reported, the institution of any comparisons would be useless. The average cost of living for all classes in this city during 1887 is almost identical with that of 1886, but the deficit in the case of male workers with dependents has brought the average surplus $20.37 below what it was then. In 1885 the total average surplus per worker was $40.98, although the cost of living in that year was $399.19 on the average for all classes of workers, but the yearly wages from occupation were greater at that time, being as $429.06 to $377.16 in 1887.

KINGSTON—The number of workers of this city who have given returns is 133.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents.	m.o.	agg.	76	4,449	20,217	31,519	1,500	1,475	34,494	30,987	3,507
		av.	....	58.54	266.01	414.72	19.74	19.41	453.87	407.72	46.15
Without dependents.	m.o.	agg.	48	2,924	12,716	16,000	187	....	16,187	14,560	1,627
		av.	....	60.92	264.92	333.33	3.90	.....	337.23	303.33	33.90
	f.o.	agg.	9	490	2,568	1,585	.....	.....	1,585	1,526	59
		av.	...	54.44	285.33	176.11	.....	.....	176.11	169.55	6.56
All classes.....		agg.	133	7,863	35,501	49,104	1,687	1,475	52,266	47,073	5,193
		av.	....	59.12	266.92	369.20	12.69	11.09	392.98	353.93	39.05

The stastistics collected from this city for 1886 were considerably more voluminous, embracing 188 schedules, of which 131 were from males with dependents. The hours of labor show a very slight reduction as compared with last year, but are three hours less than in 1885. The number of days' employment has decreased from 272.29 in 1885 and 295.52 in 1886 to 266.92—the total earnings of all classes from $415.36 last year to $392.98; cost of living from $361.88 last year to $353.93, and the surplus from $53.48 to $39.05. In 1885 the surplus stood at $47.97. Taking the class of males with dependents in each year as offering a fairer basis for comparison than the general average, the same conclusion is arrived at, though the falling off is not so marked. The total earnings for 1887 for this class are $15.42 less than in 1886 despite the increase under the heads of extra earnings and earnings of wife and children. The yearly wages have fallen from $453.35 to $414.72, and the surplus from $54.11 to $46.15.

LONDON—The returns for this city number 152, of which 113 are from males with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents.	m.o.	agg...	113	6,472	29,979	45,723	1,003	868	47,594	46,054	1,540
		av....	....	57.27	265.30	404.63	8.88	7.68	421.19	407.56	13.63
Without dependents.	m.o.	agg...	35	2,015	9,145	10,699	13	.....	10,712	9,063	1,649
		av....	....	57.57	261.29	305.69	0.37	.....	306.06	258.94	47.12
	m.u.	agg...	1	60	291	73	.....	.....	73	73	.....
		av....	....	60.00	291.00	73.00	.....	.....	73.00	73.00	.....
	f.o.	agg...	3	165	775	338	.....	.....	338	338	.....
		av....	....	55.00	258.33	112.67	.....	.....	112.67	112.67	.....
All classes.....		agg...	152	8,712	40,190	56,833	1,016	868	58,717	55,528	3,189
		av....	....	57.32	264.41	373.90	6.68	5.71	386.29	365.31	20.98

The most noticeable change is a decided lengthening of the hours of labor, the time worked per week being three hours more than in 1886. The latter time, however, 54.34 hours,

was upwards of four hours less than in 1885. The number of days employment during the year shows a slight decrease, the figures for 1886 being 268.15. The general average of total earnings has advanced from $343.48 to $386.29, accompanied by an increase of $29.33 in the the cost of living, leaving an increase in the surplus from $11.59 to $20.98. In 1885 the total earnings stood at $339.77 and the surplus at $45.23.

Oshawa—The returns upon which the accompanying table is based are from 77 male workers, 60 of the number having dependents.

Classes by sex and age.		No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
					$	$	$	$	$	$
With dependents. m.o.	agg...	60	3,533	15,775	27,935	1,187	487	29,609	26,350	3,259
	av....	....	58.88	262.92	465.58	19.78	8.12	493.48	439.17	54.31
Without dependents. m.o.	agg...	17	1,024	4,278	6,007	68	.....	6,075	5,148	927
	av....	....	60.24	251.65	353.35	4.00	.....	357.35	302.82	54.53
All classes.....	agg...	77	4,557	20,053	33,942	1,255	487	35,684	31,498	4,186
	av....	....	59.18	260.43	440.80	16.30	6.33	463.43	409.06	54.37

The statistics for 1886 represented the same classes in nearly equal numbers. The comparison indicates on the whole an improvement excepting as regards the hours of toil, which have been lengthened by over two hours in the week. The workers have had 16¾ days more work in the year. Yearly wages have increased $63.86; total earnings, $81.55; cost of living, $38.95, and the surplus, $32.60. In 1885 the workers only got 224 days' work for the year and the surplus was $9.02.

Ottawa—The capital of the Dominion furnishes 313 returns, of which 251 are made out by males with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
						$	$	$	$	$	$
With dependents.	m.o.	agg.	251	15,999	55,997	91,263	2,990	2,446	96,699	96,679	20
		av..	....	63.74	223.10	363.60	11.91	9.74	385.25	385.17	0.08
Without dependents.	m.o.	agg.	49	3,020	12,105	15,458	367	.....	15,825	11,856	3,969
		av..	....	61.63	247.04	315.47	7.49	.....	322.96	241.96	81.00
	m.u.	agg.	1	70	270	280	.....	.....	280	226	54
		av..	....	70.00	270.00	280.00	.....	.....	280.00	226.00	54.00
	f.o.	agg	11	674	2,671	1,845	.....	.....	1,845	1,980	-135
		av..	....	61.27	242.82	167.73	.....	.....	167.73	180.00	-12.27
	f.u.	agg.	1	62	300	99	.....	.....	99	129	-30
		av..	....	62.00	300.00	99.00	.....	.....	99.00	129.00	-30.00
All classes.....		agg.	313	19,825	71,343	108,945	3,357	2,446	114,748	110,870	3,878
		av..	....	63.34	227.93	348.07	10.73	7.81	366.61	354.22	12.39

The data for 1886 were so scanty that there is little room to institute a reliable comparison. The number of workers then making returns was only 35. The hours of labor show an increase of 3.63 per week. The number of days worked in the year has decreased 78.64; the yearly wages, $125.42; the total earnings, $118.19; the cost of living, $44.42; and the surplus $73.95. Taking the class of males with dependents alone, it will be seen that while in 1886 the total earnings averaged $523.09, and the cost of living $455.35, leaving a surplus of $67.74, the more comprehensive statistics now available disclose a very different state of affairs, the total earnings of $385.25 approximating so closely to the cost of living as to leave only a surplus of 8 cents. A salient feature of the returns is the fact that the 11 female workers, whose earnings average $167.73, report a deficit of $12.27. The surplus shown by the statistics of 1885 was $96.62 for all classes.

PETERBOROUGH.—The schedules of 76 persons furnish the statistics set forth below, 30 of the number being males with dependents:

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
						$	$	$	$	$	$
With dependents.	m.o.	agg...	30	1,782	8,057	13,383	533	696	14,612	12,888	1,724
		av....	....	59 40	268.57	446.10	17.77	23.20	487.07	429.60	57.47
	f.o.	agg...	1	60	300	270	.....	100	370	373	-3
		av....	....	60.00	300.00	270.00	.....	100.00	370.00	373.00	-3.00
Without dependents.	m.o.	agg...	37	2,202	9,509	11,818	250	.....	12,068	9,001	3,067
		av....	....	59.51	257.00	319.40	6.76	.....	326.16	243.27	82.89
	m.u.	agg...	1	60	300	130	.....	.....	130	115	15
		av....	....	60.00	300.00	130.00	.....	.....	130.00	115.00	15.00
	f.o.	agg...	6	330	1,566	1,107	.....	.....	1,107	973	134
		av....	....	55.00	261.00	184.50	.....	.....	184.50	162.17	22.33
	f.u.	agg...	1	54	312	52	.....	.....	52	72	-20
		av....	....	54.00	312.00	52.00	.....	.....	52.00	72.00	-20.00
All classes.....		agg...	76	4,488	20,044	26,760	783	796	28,339	23,422	4,917
		av....	....	59.05	263.74	352.11	10.30	10.47	372.88	308.18	64.70

The time worked per week is greater by a quarter of an hour than in 1886, and the number of days' work in the year has decreased by nearly 6¼ days. The wages from occupation are diminished to the amount of $33.07, and the total earnings $27.52. The reduction in living expenses slightly exceeds that of income, being $28.38, leaving the surplus 86 cents in excess of that for 1886. A comparison with 1885 shows that though in that year the workers were employed 303 days and averaged total earnings of $429.73, the surplus was $47.86, or about $14 less than in 1887.

ST. CATHARINES, THOROLD AND MERRITTON.—The number making returns from these towns is 312, of whom 179 are males with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
						$	$	$	$	$	$
With dependents.	m.o.	agg...	179	11,081	44,306	71,460	1,348	2,193	75,001	74,124	877
		av....	....	61.91	247.52	399.22	7.53	12.25	419.00	414.10	4.90
	f.o.	agg...	4	244	1,134	853	135	48	1,036	1,011	25
		av....	....	61.00	283.50	213.25	33.75	12.00	259.00	252.75	6.25
Without dependents.	m.o.	agg...	108	6,775	25,202	31,819	115	.....	31,934	28,828	3,106
		av....	...	62.73	233.35	294.62	1.06	.....	295.68	266.92	28.76
	m.u.	agg...	2	122	447	259	.....	.....	259	275	-16
		av....	....	61.00	223.50	129.50	.....	.....	129.50	137.50	-8.00
	f.o.	agg...	19	1,075	4,727	3,606	22	.....	3,628	3,531	97
		av....	....	56.58	248.79	189.79	1.16	.....	190.95	185.84	5.11
All classes		agg...	312	19,297	75,816	107,997	1,620	2,241	111,858	107,769	4,089
		av....	....	61.85	243.00	346.15	5.19	7.18	358.52	345.41	13.11

The hours of employment per week have increased by $1\frac{3}{4}$, while the days worked per year have decreased from 248.69 to 243. The low average for both years is accounted for by the circumstance that a large proportion of the workingmen of St. Catharines and neighborhood are sailors, or follow other avocations connected with navigation, and are consequently unemployed during a large portion of the year. Yearly wages have increased $32.88; total earnings, $28.63; cost of living, $25.09, and surplus, $3.54.

STRATFORD.—Returns as to the condition of labor in Stratford are furnished by 244 employés, of whom 135 are males with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus.
						$	$	$	$	$	$
With dependents	m.o.	agg.	135	8,092	38,816	63,523	1,545	813	65,881	56,149	9,732
		av.	....	59.94	287.53	470.54	11.45	6.02	488.01	415.92	72.09
	f.o.	agg.	1	60	299	299	.....	.....	299	299	.....
		av.	....	60.00	299.00	299.00	.....	.....	299.00	299.00	.....
Without dependents	m.o.	agg.	71	4,254	20,718	26,601	95	.....	26,696	21,653	5,043
		av.	....	59.92	291.80	374.66	1.34	.....	376.00	304.97	71.03
	m.u.	agg.	1	60	280	130	.....	.....	130	130	.....
		av.	....	60.00	280.00	130.00	.....	.....	130.00	130.00	.....
	f.o.	agg.	35	2,094	10,125	8,195	25	.....	8,220	7,332	888
		av.	....	59.83	289.29	234.14	.71	.....	234.85	209.48	25.37
	f.u.	agg.	1	60	280	72	.....	.....	72	72	.....
		av.	....	60.00	280.00	72.00	.....	.....	72.00	72.00	.....
All classes.....		agg.	244	14,620	70,518	98,820	1,665	813	101,298	85,635	15,663
		av.	....	59.92	288.98	405.00	6.82	3.33	415.15	350.96	64.19

The hours of labor per week are reduced by half an hour, and the time worked per year is less by 11 days than in 1886. The total earnings are $21.11 in excess of last year and the cost of living has increased by $23.87, so that the surplus is $2.76 less. Though the time worked by the week and the year and the total earnings approximate very closely to the figures for 1885, it is noticeable that owing to increased cost of living the surplus is over $20 less than in that year.

TORONTO.—For Toronto there are returns from 654 workers of all classes, 313 being males with dependents.

Classes by sex and age.			No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit(-).
						$	$	$	$	$	$
With dependents	m.o.	agg.	313	16,705	77,047	143,817	1,334	5,163	150,314	140,946	9,368
		av.	....	53.37	246.16	459.48	4.26	16.50	480.24	450.31	29.93
	f.o.	agg.	8	436	2,308	2,210	.....	.....	2,210	2,576	-366
		av.	....	54.50	288.50	276.25	.....	.....	276.25	322.00	-45.75
Without dependents	m.o.	agg.	217	11,819	55,584	74,116	25	.....	74,141	61,265	12,876
		av.	....	54.47	256.15	341.55	0.12	.....	341.67	282.33	59.34
	m.u.	agg.	19	995	5,458	2,815	.....	.....	2,815	3,275	-460
		av.	....	52.37	287.26	148.16	.....	.....	148.16	172.37	-24.21
	f.o.	agg.	91	4,893	24,667	17,538	.....	.....	17,538	16,770	768
		av.	....	53.77	271.07	192.73	.....	.....	192.73	184.29	8.44
	f.u.	agg.	6	317	1,564	559	.....	.....	559	695	-136
		av.	....	52.83	260.67	93.17	.....	.....	93.17	115.83	-22.66
All classes.....		agg.	654	35,165	166,628	241,055	1,359	5,163	247,577	225,527	22,050
		av.	....	53.77	254.78	368.59	2.08	7.89	378.56	344.84	33.72

The effect of the protracted strikes in several departments of industry is observable in the low average of the days worked per year—16 days less than in 1886. The hours of labor per week have been reduced by about 2½. Yearly wages show a diminution of $70.79 and total earnings of $73.32. The cost of living has been cut down proportionately, having fallen from $409.17 in 1886 to $344.84. The surplus is less by $9 than in 1886. A comparison with the figures for 1885 indicates that the hours of labor per week have been reduced by 1.40 ; total earnings increased by $19.30 ; cost of living augmented to the extent of $24.99, and the surplus diminished by $4.79.

STATISTICS FOR THE PROVINCE.

The statistics in the following table have been compiled from the total number of schedules collected from all of the towns and cities before mentioned, and represent the aggregate number of days worked, wages received, cost of living, surplus or deficit for the

year 1887, arranged by sex and age, with and without dependents. The averages for each of the four years 1884-7 are also given, as well as for the period :

Classes by sex and age.				No. of returns.	Hours employed per week.	Days employed in year.	Yearly wages.	Extra earnings.	Wife and minor children's earnings.	Total earnings.	Cost of living.	Surplus or deficit (-).
							£	£	£	£	£	£
With dependents.	m.o.		agg...	1,934	114,026	498,442	825,336	19,520	24,701	869,557	798,362	71,195
		av.	1887..	.....	58.96	257.73	426.75	10.09	12.77	449.61	412.80	36.81
			1886..	.....	58.34	270.82	427.93	9.43	14.40	451.76	414.01	37.75
			1885..	.....	58.76	268.42	427.89	9.05	15.31	452.25	405.08	47.17
			1884..	.....	59.05	263.42	420.40	5.55	10.34	436.29	394.29	42.00
			1884-7	.....	58.78	265.10	425.74	8.53	13.21	447.48	406.55	40.93
	f.o.		agg...	17	983	4,955	4,310	185	148	4,643	4,942	-299
		av.	1887..	.....	57.82	291.47	253.53	10.88	8.71	273.12	290.71	-17.59
			1886..	.....	55.25	272.50	236.63	7.44	18.31	262.38	234.44	27.94
			1885..	.....	57.86	287.41	195.03	.....	.....	195.03	189.07	5.96
			1884..	.....	58.57	254.93	201.98	1.36	7.27	210.61	224.86	-14.25
			1884-7	.....	57.38	276.58	221.79	4.92	8.57	235.28	234.77	0.51
	m.o.		agg...	1,047	61,548	279,383	345,671	2,766	.....	348,437	277,436	71,001
		av.	1887..	.....	58.79	266.84	330.15	2.64	.....	332.79	264.98	67.81
			1886..	.....	57.92	268.65	345.05	5.32	.....	350.37	268.71	81.66
			1885..	.....	59.39	272.97	349.02	4.30	.....	353.32	259.91	93.41
			1884..	.....	59.05	269.32	331.29	2.83	.....	334.12	252.27	81.85
			1884-7	.....	58.79	269.45	338.88	3.77	.....	342.65	261.47	81.18
	m.u.		agg...	41	2,314	11,805	6,171	.....	.....	6,171	6,480	-309
		av.	1887..	.....	56.44	287.93	150.51	.....	.....	150.51	158.05	-7.54
			1886..	.....	57.90	267.29	119.52	0.72	.....	120.24	117.95	2.29
			1885..	.....	59.29	273.14	129.46	0.50	.....	129.96	121.83	8.13
			1884..	.....	62.00	287.73	133.09	0.45	.....	133.54	138.91	-5.37
			1884-7	.....	58.91	279.02	133.14	0.42	.....	133.56	134.18	-0.62
Without dependents.	f.o.		agg...	305	17,451	85,489	64,847	47	.....	64,894	56,346	8,548
		av.	1887..	.....	57.22	280.29	212.61	0.16	.....	212.77	184.74	28.03
			1886..	.....	57.30	272.27	186.75	3.25	.....	190.00	158.45	31.55
			1885..	.....	57.98	283.03	181.06	1.37	.....	182.43	155.91	26.52
			1884..	.....	59.65	266.24	177.49	0.33	.....	177.82	166.34	11.48
			1884-7	.....	58.04	275.46	189.48	1.28	.....	190.76	166.36	24.40
	f.u.		agg...	10	553	2,731	919	.....	.....	919	1,105	-186
		av.	1887..	.....	55.30	273.10	91.90	.....	.....	91.90	110.50	-18.60
			1886..	.....	59.56	285.00	131.25	.....	.....	131.25	130.69	0.56
			1885..	.....	57.14	265.59	126.80	.....	.....	126.80	117.64	9.16
			1884..	.....	60.46	267.69	97.15	.....	.....	97.15	107.92	-10.77
			1884-7	.....	58.12	272.85	111.78	.....	.....	111.78	116.69	-4.91
All classes..			agg...	3,354	196,875	882,805	1,247,254	22,518	24,849	1,294,621	1,144,671	149,950
		av.	1887..	.....	58.70	263.21	371.87	6.71	7.41	385.99	341.28	44.71
			1886..	.....	58.13	270.41	381.83	7.72	9.26	398.81	350.36	48.45
			1885..	.....	58.85	271.28	372.98	6.72	9.15	388.85	332.50	56.35
			1884..	.....	59.10	265.17	372.29	4.33	6.69	383.31	334.47	48.84
			1884-7	.....	58.70	267.52	374.74	6.37	8.13	389.24	339.65	49.59

While, as has been noticed in the review of the various towns, the number of returns made in some individual instances has been materially lessened, it is encouraging to find that the total number for the province is greater by 670 than in 1886. The number of schedules tabulated is 3,354, of which about 89 per cent. were from males over 16. The total earnings received amounted to $1,294,621; of this, wives and minor children furnished $24,849, and $22,518 was acquired by extra work, leaving a balance of $1,247,254 as the income from regular employment. The living expenses of all the workers, including those with dependents, consumed $1,144,671, or 88.4 per cent. of the total earnings, as compared with 87.9 per cent. in 1886. The total surplus of $149,950 is $19,891 in excess of 1886, but this is accounted for by the larger number of returns, the effect of the increased cost of living in relation to the income being plainly shown by a diminished average surplus of $3.74 for each worker. In fact the average surplus for each class of worker is lower than in 1886. For men with dependents, though the cost of living was slightly lowered, the total earnings were less and the surplus of $37.75 in 1886 reduced to $36.81. For females with dependents, the total yearly income has been increased to the extent of $10.74, but the additional cost of living led to a very unfavorable result, in that instead of a surplus of $27.94, as in 1886, there appears a deficit of $17.59, worse even than in 1884. For males over 16, without dependents, the surplus stands as $67.81 to $81.66 in 1886. For boys under 16, with an increase of income of $30.27, the expenditure has been relatively greater, and a deficit of $7.54 is recorded. For females over 16, without dependents, the surplus has been reduced from $31.55 to $28.03. For girls under 16 the average yearly income has been curtailed to the extent of nearly $40, and notwithstanding the fact of a considerable reduction in living expenses having been effected, there remains an average of $18.60 on the wrong side of the balance sheet.

The average number of days of employment was 263.21 for all classes, or seven days less than in the preceding year, males over 16, with dependents, constituting the only class falling below the average in this particular. Comparing this result with that of each individual town, we find that in Almonte, Belleville, Brockville, Carleton Place, Cornwall, Gananoque, Guelph, Kingston, London, Peterborough and Stratford the provincial average was exceeded,—Almonte showing the highest average time, or 309.46 days; Peterborough came very near the average, with 263.74 days. On the other hand, Hamilton, Chatham, Galt, St. Catharines, Toronto and Ottawa fell below the average, —Ottawa taking lowest place with 227.93 days, and Hamilton next with 236.71 days. It is easy to account for the low figure at Ottawa, as a large number of men are employed there in the lumber mills, in which operations as a rule are continued for only some 190 days.

Again, the sum of $385.99, which represents the provincial average of total earnings for 1887, was exceeded in Belleville, Brockville, Chatham, Galt, Gananoque, Hamilton, Kingston, London, Oshawa, and Stratford, the first named reaching $464.39. In Almonte, where a large number of young persons are employed, and the wages paid are necessarily low, the total earnings were only $344.27 per worker.

The cost of living, which has been reduced by $9.08 from the average in 1886, is still $1.63 in excess of the annual average per worker. This average of $341.28 for 1887 was above the outlay for living expenses in Almonte, Cornwall, Galt, Guelph and Peterborough, the lowest figures being reached in Almonte and Cornwall, the seats of woollen and cotton industries. In Oshawa the expenditure was highest, and Toronto exceeds the average by but $3.53.

In Carleton Place, Guelph, Hamilton, Kingston, London, Ottawa, St. Catharines and Toronto the surplus is below the provincial average of $44.71. An average of $94.09 for all classes in Belleville was the highest, and $10.73 in Hamilton the lowest, St. Catharines following with an average surplus of $13.11.

RENT, FUEL, CLOTHING AND FOOD.—Rent, fuel, clothing and food are the chief items which go to make up the cost of living, and the appended table shows the average cost of each of these per worker, with dependents, in each town, and also the average cost of clothing, board and lodging, and the total cost of living per worker without dependents :

Towns.	Condition.			Average per worker with dependents.							Average per worker without dependents.		
	Owners.	Tenants.	Boarders.	No. of dependents. Total.	No. of dependents. Under 16	Rent.	Fuel.	Clothing per capita.	Food per capita.	Total cost of living per capita.	Clothing.	Board and lodging.	Total cost of living.
						$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Almonte	38	45	218	3.41	2.16	62 86	41 05	12 44	42 67	88 88	44 83	116 37	202 19
Belleville	18	35	29	2.44	1.22	75 28	41 11	24 17	.....	125 58	.....	.....	245 56
Brockville	27	68	89	3.29	2.06	77 38	44 42	16 28	48 85	95 17	51 05	173 80	291 11
Carleton Place	16	38	52	3.19	2.09	73 12	44 36	16 57	53 47	102 77	48 01	150 00	255 19
Chatham	73	89	55	3.77	2.41	62 41	29 11	16 89	45 71	83 94	60 87	156 22	225 80
Cornwall	7	30	32	2.81	1.68	69 43	35 49	13 09	47 42	90 15	45 16	155 44	223 06
Galt	15	16	24	3.55	1.97	76 13	41 59	16 32	49 38	88 42	51 32	159 43	260 08
Gananoque	6	10	14	3.35	1.75	62 00	34 62	21 16	41 08	92 28	58 12	149 60	257 10
Guelph	55	89	83	3.91	2.44	65 92	40 89	15 48	43 77	80 36	44 95	145 60	213 35
Hamilton	27	62	33	3.88	2.68	81 34	41 33	12 89	45 76	86 35	64 52	182 14	285 13
Kingston	18	56	59	3.93	2.53	70 00	42 50	12 91	.....	82 63	51 74	151 63	282 21
London	56	57	39	3.47	2.12	70 36	40 96	15 58	50 39	91 20	53 85	153 20	242 92
Oshawa	20	40	17	3.67	2.13	61 67	42 59	20 58	47.51	94 11	57 41	166 85	302 83
Ottawa	22	228	63	4.35	3.21	97 08	32 61	10 52	36 55	72 04	31 56	157 89	228 89
Peterborough	8	21	47	3.42	2.03	68 00	38 03	19 47	50 49	96 80	58 96	141 49	225 80
St. Catharines	37	140	135	3.77	2.51	55 72	42 12	16 41	45 79	86 16	56 04	171 85	252 98
Stratford	66	68	110	3.60	2.38	75 27	38 49	24 38	37 04	90 17	69 30	147 70	270 25
Toronto	35	278	341	3.31	2.21	112 64	41 24	16 93	47 72	103 78	48 05	174 83	246 26
The Province. 1887	544	1370	1440	3.63	2.37	82 68	39 35	15 85	44 37	88 90	51 00	162 62	243 31
The Province. 1886	540	1,130	1,014	3.64	2.31	71 52	41 21	18 84	44 42	88 96	64 85	159 30	239 40
The Province. 1885	....	.....	.....	3.54	2.26	74 41	40 53	19 03	47 67	88 36	55 09	.....	225 71
The Province. 1884	....	.....	.....	3.34	.....	.....	.....	.....	.....	89 89	.. . .	.....	230 11

The table divides the workers with dependents into 1,914 householders, of which 1,370 are tenants and 544 are owners of houses occupied, while 1,440 are boarders. The average rent has, of course, been taken from the returns of tenants only, while fuel is reck-

oned from the returns of householders. There are returns from 4 more owners, 240 more tenants, and 426 more boarders than were procured in the year 1886. In the matter of yearly rent, there is great variety in the averages of the different towns, which range from $55.72 in St. Catharines and $61.67 in Oshawa, to $112.64 in Toronto and $97.08 in Ottawa. The average for the province is $82.68, against $71.52 in 1886 and $74.41 in 1885. The large number of returns from Ottawa and Toronto, with the high average rental exercised an undue influence on the provincial average, which is based on the rents of 1,294 tenants, 278 being from Toronto and 227 from Ottawa. The average cost of fuel for the province shows a decline compared with the two previous years, being $1.86 less than in 1886, and $1.18 below the figures for 1885. The annual amount paid for fuel averaged over $44 in Brockville and Carleton Place, but touched as low as $29.11 in Chatham. In the item of clothing, however, there is, perhaps, the greatest proportionate diversity, for while the provincial average per capita for the families of workers is $15.85, the average runs as low as $10.52 in Ottawa, and as high as $24.38 and $24.17 in Stratford and Belleville respectively. The average cost of clothing per capita in the province is $2.99 below that of the previous year, but there is scarcely any change in the average cost of food per head in the families of workers, the figures being $44.37 in 1887 and $44.42 in 1886. In the item of food, however, the cost runs as high as $53.47 in Carleton Place, and drops to $36.55 in Ottawa. The total cost of living per capita is 6 cents below that of 1886, and 54 cents above that of 1885, taking the average for the province, which is $88.90; but Belleville shows an average of $125.58, Toronto $103.78, and Carleton Place $102.77, while in Ottawa it falls to $72.04 per head. In Ottawa, however, the total number of dependents per worker shows an average of 4.35, while the provincial average is 3.63; and only one out of ten of the workers with dependents reporting from the Dominion capital owns the house he lives in, while taking the average of the province about four out of every ten are owners. Taking workers without dependents, it will be seen that while the cost of clothing per annum is below that of either of the two years immediately preceding, it is more than three times as high as the average cost of clothing per head in the families of workers with dependents, being $51. In Stratford the average amount spent annually for clothing by this class of workers was $69.30, and in Hamilton $64.52, while in Ottawa economy in dress was practised to such an extent that the bill averaged but $31.56 per annum. The average cost of board for workers without dependents was $162.62, as compared with $159.30 in 1886. Hamilton went about $20 above that amount, but Almonte, where 83 of the 218 boarders reporting are females, working chiefly in the woollen mills, fell to $116 per annum in its average. The total cost of living for workers without dependents was $243.31 for the province, and of course was least in Almonte, for the reason before given. In Oshawa, however, where wages ruled high, the average total cost of living per worker without dependents was $302.83, the young men and women of that town living higher than those of the same class in the cities.

CLASSIFICATION OF WORKERS BY RANGES.

A number of tabular statements have been prepared from the returns of the whole body of 3,354 workers, presenting from different points of view, or upon different bases of classification of the workers, the statistics which have been obtained in regard to their condition.

TIME EMPLOYED.—In the following table constancy of employment is taken as the basis of classification, and the average condition is shown of each class or group of workers arranged according to the number of days during which they were employed in the year. In the class having dependents, the proportion of dependents sustained per

worker in each of such groups is shown. The average of yearly earnings and cost of living are also given for the whole, of both sexes :

Range of days employed.	No. of workers.	Average per worker in range.						
		Dep.	Days employed.	Yearly earnings.			Cost of living.	Surplus.	Deficit.
				Wages.	Extras.	Total.			
With dependents :				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
150 and under	61	3.56	132.98	231 36	67 10	298 46	363 26	.....	64 80
150 to 200	309	3.66	188.11	321 97	33 28	355 25	370 23	.....	14 98
200 to 225	216	3.88	215.99	380 44	18 65	399 09	395 00	4 09	.....
225 to 250	217	3.66	242.45	399 76	17 12	416 88	400 41	16 47	.....
250 to 275	225	3.79	266.88	415 86	21 19	437 05	407 81	29 24	.....
275 to 300	638	3.50	294.63	479 65	19 64	499 29	436 75	62 54	.....
Over 300	285	3.58	315.33	517 66	18 01	535 67	435 56	100 11	.....
Average days employed	1,951	3.63	258.02	425 24	22 84	448 08	411 74	36 34	.....
Over average	1,120	3.58	295.32	478 03	19 62	497 65	431 41	66 24	.....
Under average	831	3.71	207.75	354 10	27 16	381 26	385 22	.....	3 96
Without dependents :									
150 and under	32	.....	129.59	208 12	14 66	222 78	211 84	10 94	.....
150 to 200	165	.....	188.25	266 64	2 72	269 36	240 58	28 78	.....
200 to 225	80	.....	216.00	284 39	4 91	289 30	242 55	46 75	.....
225 to 250	133	.....	243.32	308 31	1 85	310 16	259 60	50 56	.....
250 to 275	141	.....	267.56	318 66	1 85	320 51	254 87	65 64	.....
275 to 300	574	.....	295.18	302 70	1 49	304 19	248 25	55 94	.....
Over 300	278	.....	314.38	304 02	0 50	304 52	224 94	79 58	.....
Average days employed	1,403	.....	270.43	297 65	2 01	299 66	243 31	56 35	.....
Over average	888	.....	300.37	303 10	1 15	304 25	240 87	63 38	.....
Under average	515	.....	218.79	288 25	3 48	291 73	247 52	44 21	.....
With and without dependents:									
150 and under	93	.....	131.82	223 36	49 05	272 41	311 16	.....	38 75
150 to 200	474	.....	188.16	302 71	22 65	325 36	325 10	0 26	.....
200 to 225	296	.....	215.99	354 48	14 94	369 42	353 80	15 62	.....
225 to 250	350	.....	242.78	365 01	11 32	376 33	346 90	29 43	.....
250 to 275	366	.....	267.14	378 41	13 74	392 15	348 89	43 26	.....
275 to 300	1,212	.....	294.89	395 85	11 04	406 89	347 47	59 42	.....
Over 300	563	.....	314.86	412 17	9 36	421 53	331 56	89 97	.....
Average days employed	3,354	.....	263.21	371 87	14 12	385 99	341 28	44 71	.....
Over average	2,020	.....	297.60	398 16	11 46	409 62	343 29	66 33	.....
Under average	1,334	.....	211.13	332 07	18 78	350 85	338 25	12 60	.....

Nearly three-fifths of those workers with dependents were employed over the average time (258 days) and averaged 295 days, or over 49 weeks in the year. Their earnings and surplus respectively were $50 and $30 over the average. Naturally the more fully the worker's time is employed the less aid does he receive from extras, and though those who fell below the average in number of days employed show larger earnings from extras and expend less in living than the average, it does not save them from a deficit at the close of the year. As might be expected, the earnings of those who are without dependents are less, in proportion to time employed, than those of men with families, who are pre-

sumably more experienced and skilful workmen. The fact that more than 60 per cent. of those without dependents show an average of 300 days' employment in the year, and the average of 297 days for over 60 per cent. of all classes of workers, indicates a pretty constant condition of employment as regards a large proportion of those from whom returns have been received. The 474 in the range 150 to 200 days is swelled by an unusually large number of returns from the lumber mills, the majority getting only 190 days employment.

RANGE OF TIME EMPLOYED, BY TOWNS.—In the following table the total 3,354 workers are classified by ranges according to the days employed and the number in each range is shown by towns :

Towns.	Average days employed.	No. of workers in range of days employed.							
		150 and under.	150 to 200.	200 to 225.	225 to 250.	250 to 275.	275 to 300.	Over 300.	Total.
Almonte	309.46	.....	.....	1	4	1	44	251	301
Belleville	289.09	.....	5	1	3	10	56	7	82
Brockville	266.25	12	24	14	14	19	49	52	184
Carleton Place	271.43	3	7	3	16	12	56	9	106
Chatham	259.55	10	31	15	21	30	66	44	217
Cornwall	264.52	3	4	3	16	18	17	8	69
Galt	257.53	7	5	1	6	3	28	5	55
Gananoque	264.13	.....	3	1	10	4	9	3	30
Guelph	275.57	1	8	9	28	61	103	17	227
Hamilton	236.71	5	28	21	18	16	28	6	122
Kingston	266.92	3	14	7	18	5	75	11	133
London	264.41	6	18	13	11	7	72	25	152
Oshawa	260.43	1	7	4	18	16	26	5	77
Ottawa	227.93	1	119	69	34	39	48	3	313
Peterborough	263.74	2	11	4	12	7	32	8	76
St. Catharines, etc	243.00	20	65	33	44	37	96	17	312
Stratford	288.98	7	6	.....	9	24	137	61	244
Toronto	254.78	12	119	97	68	57	270	31	654
Totals	263.21	93	474	296	350	366	1,212	563	3,354

Here it will be seen that largest number of returns appear in the range 275 to 300 days; and this is the case in the majority of the towns, Almonte and Ottawa being the most noticeable exceptions. In the former over 83 per cent. of the workers are employed over 300 days, and in the latter over 38 per cent., come within the range 150 to 200 days. Only 6 workers were employed less than 275 days in Almonte. In Belleville and Gananoque 150 days was the minimum limit.

TOTAL EARNINGS.—In the following table the workers are classified according to the amount of their total yearly earnings, and the averages of days employed, earnings, cost of living, etc., are given for each group as arranged under this classification:

Range of total earnings.	No. of workers.	Average per worker in range.							
		Dep.	Days employed.	Earnings.		Cost of living.		Surplus.	Deficit.
				Total.	Av. per day.	Total.	Per capita.		
With dependents:				$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
$200 and under	16	2.75	161.94	174 25	1 08	258 94	69 05	.....	84 69
$200 to $300	259	3.43	213.54	269 80	1 26	314 78	71 06	.....	44 98
$300 to $400	580	3.47	249.72	359 84	1 44	361 40	80 85	.....	1 56
$400 to $500	586	3.65	266.31	455 65	1 71	422 64	90 89	33 01	.....
$500 to $600	288	3.78	277.65	557 06	2 01	473 65	99 09	83 41	.....
$600 to $700	116	4.05	284.99	650 18	2 28	532 43	105 43	117 75	....
Over $700	106	4.15	297.83	848 71	2 85	586 62	113 91	262 09	.....
Average earnings	1,951	3.63	258.02	448 08	1 74	411 74	88 90	36 34	.....
Over average	884	3.79	278.71	569 13	2 04	476 31	99 44	92 82	.....
Under average	1,067	3.50	240.88	347 78	1 44	358 24	79 61	.....	10 46
Without dependents:									
$200 and under	374	.....	272.86	153 50	0 56	157 28	.....	.....	3 78
$200 to $300	411	.....	259.96	252 35	0 97	224 74	.....	27 61	.....
$300 to $400	327	.....	271.87	353 70	1 30	279 27	.....	74 43	.....
$400 to $500	202	.....	280.26	453 07	1 62	326 92	.....	126 15	.....
$500 to $600	72	.....	277.86	550 54	1 98	366 23	.....	184 31	.....
$600 to $700	10	.....	288.20	640 29	2 22	353 08	.....	287 21	.....
Over $700	7	.....	302.29	868 00	2 87	417 29	.....	450 71	.....
Average earnings	1,403	.....	270.43	299 66	1 11	243 31	.....	56 35	.....
Over average	659	.....	275.67	412 14	1 50	304 77	.....	107 37	.....
Under average	744	.....	265.78	200 03	0 75	188 88	.....	11 15	.....
With and without dependents:									
$200 and under	390	.....	268.31	154 35	0 58	161 45	.....	.....	7 10
$200 to $300	670	.....	242.02	259 09	1 07	259 55	.....	.....	0 46
$300 to $400	907	.....	257 70	357 63	1 39	331 79	.....	25 84	.....
$400 to $500	788	.....	269.90	454 99	1 69	398 10	.....	56 89	.....
$500 to $600	360	.....	277.69	555 76	2 00	452 17	.....	103 59	.....
$600 to $700	126	.....	285.25	649 40	2 28	518 19	.....	131 21	.....
Over $700	113	.....	298.11	849 90	2 85	576 13	.....	273 77	.....
Average earnings	3,354	.....	263.21	385 99	1 47	341 28	.....	44 71	.....
Over average	1,595	.....	274.81	513 30	1 87	426 41	.....	86 89	.....
Under average	1,759	.....	252.69	270.55	1 07	264 09	.....	6 46	.....

Naturally, a very large proportion of those who receive the highest wages is to be found in the class having families, and the bulk of those with lighter earnings is confined to the younger and less valuable class of workers who appear in the table of those without dependents. In all cases those workers whose aggregate earnings are the greatest

show not only the highest average of days employed, but they also receive the highest average wages per day. It is noticeable, in respect to the first class in the table, that as the earning power increases so does the proportion of dependents. The ratio of expenditure, too, as shown by the greater cost of living *per capita*, increases in the same order, indicating a corresponding accession of comforts. It is the minority, however, who obtain the highest wages, their earning power for all classes exceeding that of the majority by 80 cents per day. The cost of living per head of family in the class of workers with dependents earning over the average wages is $99.40, or about $20 more than for those in the class earning under the average. Still the worker in the former class is enabled to save $92.83 (even with a larger family) while the worker in the latter class has a deficit of $10.46.

RANGE OF EARNINGS, BY TOWNS.—In the following table the 3,354 workers classified by ranges according to total earnings are further subdivided by towns, and the number of workers in each town is shown by these ranges :

Towns.	Average total earnings.	No. of workers in range of total earnings.							
		$200 and under.	$200 to $300.	$300 to $400.	$400 to $500.	$500 to $600.	$600 to $700.	Over $700.	Totals
	$ c.								
Almonte	344 27	74	60	103	36	4	7	17	301
Belleville	464 39	8	10	7	32	16	3	6	82
Brockville	426 89	6	29	48	65	19	12	5	184
Carleton Place	375 81	10	22	37	20	14	2	1	106
Chatham	414 59	22	29	57	58	26	18	7	217
Cornwall	359 26	6	15	25	14	8	1	.....	69
Galt	415 36	3	7	16	15	12	2	.....	55
Gananoque	440 43	1	6	4	10	6	1	2	30
Guelph	372 67	26	46	74	51	18	6	6	227
Hamilton	398 64	.....	28	42	34	11	6	1	122
Kingston	392 98	16	31	24	32	20	6	4	133
London	386 29	22	18	40	53	13	5	1	152
Oshawa	463 43	3	5	21	22	15	6	5	77
Ottawa	366 61	24	83	96	70	29	5	6	313
Peterborough	372 88	9	20	22	12	6	4	3	76
St. Catharines, etc	358 52	26	97	85	58	39	3	4	312
Stratford	415 15	27	30	60	67	39	11	10	244
Toronto	378 56	107	134	146	139	65	28	35	654
Totals	385 99	390	670	907	788	360	126	113	3,354

In Hamilton each worker has succeeded in earning over $200, and in Cornwall and Galt none has exceeded $700. The majority have not earned more than $400 in most of the towns, Belleville, Brockville, Chatham, Galt, Gananoque, Oshawa and Stratford showing but slight variation to the contrary.

Cost of Living.—Classified according to the cost of living, the results are as appear in the following table:

Range of Cost of Living.	No. of workers.	Average per worker in range.					
		Dep.	Days employed.	Earnings.	Cost of living.		Surplus.
					Total.	Per capita.	
With dependents:				$ c.	$ c.	$ c.	$ c.
$200 and under	3	2.33	281.00	290 53	192 33	57 70	98 20
$200 to $250	47	2.38	218.26	273 13	233 41	69 06	39 72
$250 to $300	174	2.96	247.51	320 13	288 17	72 77	31 96
$300 to $350	355	3.25	245.99	362 82	332 43	78 22	30 39
$350 to $400	481	3.42	256.65	408 44	380 47	86 08	27 97
$400 to $450	335	3.72	259.63	457 72	429 23	90 94	28 49
$450 to $500	279	4.03	266.46	526 36	479 22	95 27	47 14
$500 to $600	195	4.26	274.78	606 09	547 95	104 17	58 14
Over $600	82	5.52	287.23	745 75	686 02	105 22	59 73
Average cost of living	1,951	3.63	258.02	448 08	411 74	88 90	36 34
Over average	838	4.13	268.94	545 88	500 05	97 48	45 83
Under average	1,113	3.26	249.80	374 44	345 25	81 04	29 19
Without dependents:							
$200 and under	533	.....	278.25	194 00	165 71	.....	28 29
$200 to $250	309	.....	261.96	292 09	228 66	.....	63 43
$250 to $300	287	.....	267.30	363 92	280 09	.....	83 83
$300 to $350	135	.....	257.71	401 98	325 13	.....	76 85
$350 to $400	80	.....	275.36	463 31	381 06	.....	82 25
$400 to $450	30	.....	277.83	506 36	434 96	.....	71 40
$450 to $500	18	.....	283.38	524 22	478 17	.....	46 05
$500 to $600	11	.....	289.45	577 78	542 94	.....	34 84
Average cost of living	1,403	.....	270.43	299 66	243 31	.....	56 35
Over average	645	.....	268.60	397 56	315 24	.....	82 32
Under average	758	.....	271.98	216 35	182 11	.....	34 24
With and without dependents:							
$200 and under	536	.....	278.27	194 54	109 88	.....	84 66
$200 to $250	356	.....	256.19	289 59	229 28	.....	60 31
$250 to $300	461	.....	259.83	347 40	283 14	.....	64 26
$300 to $350	490	.....	249.22	373 61	330 42	.....	43 19
$350 to $400	561	.....	259.31	416 26	380 55	.....	35 71
$400 to $450	365	.....	261.13	461 72	429 70	.....	32 02
$450 to $500	297	.....	267.48	526 23	479 15	.....	47 08
$500 to $600	206	.....	275.57	604 58	547 68	.....	56 90
Over $600	82	.....	287.23	745 75	686 02	.....	59 73
Average cost of living	3,354	.....	263.21	385 99	341 28	.....	44 71
Over average	1,657	.....	263.76	482 76	442 08	.....	40 68
Under average	1,697	.....	262.67	291 51	242 87	.....	48 64

In the first part of the table is shown very clearly again the influence that the volume of earnings has upon the extent of household responsibilities assumed, and upon the regulation of the cost of living generally. Each ascent in the scale of expenditure is accompanied by an increase in the number of dependents, and is warranted by larger

earnings on the part of the worker. Under the classification presented in this table each range of workers has a surplus on the average. Practically one-half of the whole number fall below this average cost of living, and average $200 per year less than those that exceed the general average. The majority of workers without dependents being included in the apparently more economical class accounts for this wide range. But in the class of workers with dependents we find it is again the minority whose cost of living is over the average, their average being $500, or $155 in excess of that of the remaining majority. Owing to a larger number of dependents, however, the cost per capita in the former is but $16.40 greater than the latter.

SURPLUS EARNINGS.—In the following table the workers are classified on the basis of surplus or deficit of the year, and the corresponding statistics are given in each, group of this classification. The proportion between earnings and cost of living is thus brought out with more detail.

Earnings more than cost of living.	With dependents.						Without dependents.				
	No.	Av. dep.	Av. days.	Av. total earnings.	Av. cost of living.	Av. surplus.	No.	Av. days.	Av. total earnings.	Av. cost of living.	Surplus.
				$ c.	$ c.	$ c.			$ c.	$ c.	$ c.
$ 0 to $ 10.....	117	3.68	250.45	418 20	413 38	4 82	116	272.12	205 96	200 86	5 10
$ 10 to $ 20.....	89	3.64	259.84	416 99	400 58	16 41	83	261.36	246 58	231 31	15 27
$ 20 to $ 30.....	89	3.52	263.52	435 68	409 92	25 76	84	268.64	260 31	235 01	25 30
$ 30 to $ 40.....	72	3.44	268.21	455 48	419 30	36 18	62	260.94	293 00	257 30	35 70
$ 40 to $ 50.....	100	3.34	277.88	448 33	401 49	46 84	73	281.62	301 27	254 29	46 98
$ 50 to $ 75.....	153	3.14	274.94	473 98	409 67	64 31	108	268.82	315 81	252 46	63 35
$ 75 to $100.....	118	3.22	280.57	514 00	422 78	91 22	115	270.23	365 99	275 81	90 18
$100 to $150.....	151	3.38	279.25	541 28	416 34	124 94	164	286.13	386 25	261 50	124 75
$150 to $200.....	69	2.90	287.23	596 00	419 85	176 15	86	288.36	456 65	278 55	178 10
$200 to $300	73	3.00	290.45	674 04	426 18	247 86	56	284.55	522 53	279 96	242 57
$300 to $400.....	25	3.00	301.28	843 73	494 36	349 37	14	265.64	597 26	260 57	336 69
$400 to $500.....	10	2.90	291.60	930 12	484 40	445 72	2	306.50	883 00	466 50	416 50
Over $500	9	4.22	308.11	1097 61	522 56	575 05	3	304.33	946 66	339 33	607 33
Total	1075	3.33	274.01	509 72	416 98	92 74	966	274.92	338 95	252 44	86 51
Earnings equal to cost of living....	296	3.98	262.57	421.98	421 98	.....	261	268.79	231 97	231 97	.....
Earnings less than cost of living—						D'ficit					D'ficit
$ 0 to $ 10.....	89	3.98	243.01	397 52	402 47	4 95	64	249.69	207 58	212 39	4 81
$ 10 to $ 20.....	84	4.06	233.26	373 43	389 21	15 78	35	244.31	191 64	207 29	15 65
$ 20 to $ 30	81	3.69	230.20	362 69	387 99	25 30	22	237.86	165 00	189 84	24 84
$ 30 to $ 40.....	53	3.87	227.62	334 61	369 72	35 11	12	264 12	225 32	260 63	35 31
$ 40 to $ 50.....	54	3.76	233.61	346 97	392 27	45 30	17	243 82	136 38	180 88	44 50
$ 50 to $ 75.....	96	4.17	218.32	320 11	381 90	61 79	18	250.67	149 35	211 26	61 91
$ 75 to $100.....	58	4.62	219.59	318 75	405 82	87 07	5	250.00	120 00	213 60	93 60
$100 to $150.....	42	4.00	199.29	299 27	422 24	122 97	3	279.33	172 33	289 33	117 00
$150 to $200.....	17	3.82	195.24	292 37	465 71	173 34	....	.....	.....	.....	.....
Over $200	6	3.67	197.00	331 29	594 50	263 21	....	.....	.....	.....	.....
Total	580	4.01	226.06	347 14	396 79	49 65	176	248.17	184 37	210 03	25 66
Average surplus....	1951	3.63	258.02	448 08	411 74	36 34	1403	270.43	299 66	243 31	56 35
Over average.....	742	3.20	281.02	545 89	419 09	126 80	521	279.42	408 85	269 75	139 10
Under average	1209	3.90	243.90	388 05	407 23	-19 18	882	265.11	235 16	227 70	7 46

Of the workers with dependents 1,075, or nearly 55 per cent., averaging with themselves included 4.33 persons to the family, manage to save something,—their average surplus being $92.74, while 296 workers, supporting one-fifth more dependents, just make ends meet, and 580 show an average deficit of $49.65. The range of employment between the two extremes is considerable, those showing surpluses having been employed on an average 274 days in the year, while those with deficits show an average employment of only 226 days. The average cost of living per capita has already been shown to be $88.90 as against $88.96 for the previous year. It will be seen that for those workers whose earnings exceeded expenditure the average expenditure was $416.98, or $96.30 per head, which is $7.40 per head more than the average over all Those whose earnings were just equal to the cost of living did not expend up to the average by $4.17 per capita, and those who show a deficit expended $9.70 per capita less than the average, and $17.10 per capita less than the class first named, indicating a considerable range in the degree of comfort enjoyed. Naturally the proportion of workers without dependents who show deficits is small, only 176 or one-eighth of this class of workers ending the year in this state, while 966, or nearly 69 per cent. have a surplus averaging $86.51, and 261 spend all they earn. For all workers with dependents the average surplus is $36.34. Here again it is the minority who save over the average, their average surplus being $126.80, and the statistics show that the remaining workers expend on an average $19.18 more than they earn.

In the following table the workers are classified according to surpluses or deficits irrespective of dependents, the averages being found from the aggregate of the two classes in the preceding table.

Range of surplus or deficit.	Workers with surplus.					Workers with deficits.				
	No.	Days employed.	Yearly earnings.	Cost of living.	Surplus.	No.	Days employed.	Yearly earnings.	Cost of living.	Deficit.
			$ c.	$ c.	$ c.			$ c.	$ c.	$ c.
$ 0 to $ 10	233	261.24	312 54	307 58	4 96	153	245.80	318 07	322 96	4 89
$ 10 to $ 20	172	260.58	334 76	318 90	15 86	119	236.51	319 96	335 70	15 74
$ 20 to $ 30	173	266.01	350 53	324 99	25 54	103	231.83	320 46	345 67	25 21
$ 30 to $ 40	134	264.84	380 30	344 34	35 96	65	234.35	314 43	349 58	35 15
$ 40 to $ 50	173	279.46	386 28	339 38	46 90	71	236.06	296 54	341 65	45 11
$ 50 to $ 75	261	272.41	408.53	344 62	63 91	114	223.43	293 15	354 96	61 81
$ 75 to $100	233	275.47	440 95	350 24	90 71	63	222.00	302 97	390 56	87 59
$100 to $150	315	282.83	460 57	335 73	124 84	45	204.62	290 81	413 38	122 57
$150 to $200	155	287.86	518 68	341 45	177 23	17	195.24	292 37	465 71	173 34
$200 to $300	129	287.89	608 27	362 71	245 56	6	197.00	331 29	594 50	263 21
$300 to $400	39	288.49	755 26	410 44	344 82	....	.....	.....	.....	.....
$400 to $500	12	294.08	922 27	481 42	440 85	....	.....	.....	.....	.....
over $500	12	307.17	1,059 88	476 75	583 13	....	.....	.....	.....	.....
Total	2,041	274.44	428 90	339 11	89 79	756	231.21	309 25	353 31	44 06
Earnings equal cost of living	557	265.48	332 95	332 95	....	....	.....	.....	.....	.....
Average of all workers	3,354	263.21	385 99	341 28	44 71	....	.....	.....	.....	.....
Over average surplus	1,271	280.61	481 55	349 65	131 90	....	.....	.....	.....	.....
Under average surplus	2,083	252.59	327 68	336 18	-8 50	....	.....	.....	.....	.....

This statement shows that 2,041 or 60 per cent. of all the workers are returned as having saved an aggregate of $183,260 out of their year's earnings, or $89.79 per worker, while 557 earned just sufficient to meet cost of living, and 756 fell behind to the extent of $33,313, or $44.06 per worker. It also shows that the average surplus of $44.71 is exceeded by 1,271 workers who save on the average $131.90, while the majority who save under the average fail to meet expenses by $8.50 per worker—being employed 28 days less, earning $153.87 less, and expending $13.47 less than per worker in the first class.

RANGE OF SURPLUS OR DEFICIT, BY TOWNS.—A more detailed statement as to the locations of the surpluses or deficits is given in the following table. The numbers of various ranges of surpluses or deficits are given by towns:

Range of surplus.	Almonte.	Belleville.	Brockville.	Carleton Place.	Chatham.	Cornwall.	Galt.	Gananoque.	Guelph.	Hamilton.	Kingston.	London.	Oshawa.	Ottawa.	Peterborough.	St. Catharines.	Stratford.	Toronto.	Totals.
$ $																			
0 to 10.....	44	...	4	6	8	4	5	3	20	7	4	6	5	18	2	20	17	60	233
10 to 20.....	16	...	4	5	10	10	3	4	15	2	2	4	4	11	9	15	9	49	172
20 to 30.....	13	1	4	12	7	2	4	1	23	7	3	3	4	11	3	16	21	38	173
30 to 40.....	5	...	3	6	5	8	2	...	8	4	3	5	1	15	5	21	15	28	134
40 to 50.....	35	4	12	4	10	2	2	5	13	7	5	8	2	11	4	10	18	21	173
50 to 75.....	34	2	11	6	21	9	6	3	32	8	4	10	6	11	10	22	27	39	261
75 to 100.....	24	25	13	8	15	6	6	2	17	6	9	11	10	8	6	16	24	27	233
100 to 150.....	56	9	20	9	25	7	7	3	25	3	15	10	5	17	11	15	32	46	315
150 to 200.....	16	7	14	5	17	5	2	1	12	4	3	5	6	5	7	8	11	27	155
200 to 300.....	18	5	17	2	6	5	5	4	4	4	4	4	3	14	1	4	8	21	129
300 to 400.....	4	1	4	1	2	2	1	1	...	...	...	1	1	4	2	1	4	10	39
400 to 500.....	3	1	3	...	3	...	...	...	...	...	...	...	...	1	...	...	...	1	12
Over 500.....	5	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	1	3	12
Spend all they earn.....	26	27	50	13	57	1	11	3	23	23	73	39	23	8	1	49	51	79	557
Deficit.																			
0 to 10.....	...	...	2	5	3	2	1	...	9	7	1	8	1	19	9	26	1	59	153
10 to 20.....	1	...	4	3	7	...	...	...	9	7	...	8	2	27	1	20	2	28	119
20 to 30.....	1	...	1	3	7	2	...	...	3	13	...	2	3	29	1	11	1	26	103
30 to 40.....	...	...	1	4	3	...	...	...	2	6	1	4	...	19	...	11	1	13	65
40 to 50.....	...	...	1	4	4	...	...	...	1	2	1	5	...	17	1	10	...	25	71
50 to 75.....	...	...	8	4	4	3	...	...	4	2	1	6	1	37	1	18	...	25	114
75 to 100.....	...	...	3	2	...	1	...	...	3	1	...	3	...	24	2	7	...	17	63
100 to 150.....	...	...	4	3	1	...	...	...	4	5	1	6	...	6	...	7	...	8	45
150 to 200.....	...	...	1	1	1	...	...	...	...	2	2	3	...	...	...	3	1	3	17
200 to 300.....	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	2	...	1	6
Totals.....	301	82	184	106	217	69	55	30	227	122	133	152	77	313	76	312	244	654	3,354

There were no deficits in Belleville and Gananoque, one in Galt and two in Almonte. In Hamilton 38 per cent., Ottawa 57 per cent., St. Catharines 35 per cent. and Toronto 30 per cent. of the returns show deficits.

SUMMARY OF RELATION OF EARNINGS TO COST OF LIVING.—The following table presents for convenience a comparative statement, for each of the last four years, of the statistics that have been collected under this head and presented in various forms in the preceding tables, with an average for the whole period :

Schedule.		Relation of earnings to cost of living—								
		More than			Equal to			Less than		
		With dep.	Without dep.	Total.	With dep.	Without dep.	Total.	With dep.	Without dep.	Total.
Average per worker of—										
Dependents	1887..	3.33	.....	.....	3.98	.....	.....	4.01	.....	.....
	1886..	3.45	.....	.....	3.68	.....	.....	4.13	.....	.....
	1885..	3.41	.....	.....	3.59	.....	.....	3.97	.....	.....
	1884..	3.09	.....	.....	3.47	.....	.....	3.82	.....	.....
	1884-7	3.32	.....	.....	3.68	.....	.....	3.98	.....	.....
Days employed	1887..	274.01	274.92	274.44	262.57	268.79	265.48	226.06	248.17	231.21
	1886..	279.96	273.92	277.62	267.78	270.69	269.01	247.83	235.12	245.44
	1885..	278.53	279.15	278.79	267.14	277.99	271.72	233.61	218.11	230.52
	1884..	280.37	275.77	278.49	258.78	265.47	260.79	209.64	229.82	214.97
	1884-7	278.22	275.94	277.33	264.07	270.73	266.75	229.28	232.80	230.53
Earnings ....$	1887..	509.72	338.95	428.90	421.98	231.97	332.95	347.14	184.37	309.25
	1886..	490.42	354.00	437.57	398.89	207.31	318.10	375.16	181.06	338.64
	1885..	493.21	345.03	431.87	396.59	218.87	321.50	356.12	160.67	317.16
	1884..	510.95	373.32	454.75	385.86	205.39	331.51	300.25	147.79	259.96
	1884-7	501.07	352.82	438.27	400.83	215.88	326.01	344.67	168.47	306.25
Cost of living....$	1887..	416.98	252.44	339.11	421.98	231.97	332.95	396.79	210.03	353.31
	1886..	407.46	252.13	347.29	398.89	207.31	318.10	435.52	216.25	394.27
	1885..	400.14	231.91	330.50	396.59	218.87	321.50	412.86	191.10	368.66
	1884..	398.70	251.88	338.75	385.86	205.39	331.51	374.88	191.48	326.42
	1884-7	405.82	247.09	338.91	400.83	215.88	326.01	405.01	202.21	360.66
Surplus or deficit(-)$	1887..	92.74	86.51	89.79	.....	.....	.....	-49.65	-25.66	-44.06
	1886..	82.96	101.87	90.28	.....	.....	.....	-60.36	-35.19	-55.63
	1885..	93.07	113.12	101.37	.....	.....	.....	-56.74	-30.43	-51.50
	1884..	112.25	121.44	116.00	.....	.....	.....	-74.63	-43.69	-66.46
	1884-7	95.25	105.73	99.36	.....	.....	.....	-60.34	-33.74	-54.41

The relation of earnings to cost of living are here clearly exhibited in the two classes of workers—those with dependents and those without. The next table gives in concise form the same figures for workers with dependents, but only retaining, in regard to earnings and cost of living, the three divisions—the first being for workers

whose earnings are more than the cost of living, the second for those with earnings and cost of living equal, and the third for those whose earnings do not meet cost of living:

Schedule.		1887.	1886.	1885.	1884.	Average 1884-7.
Days employed	1st ..	274.01	279.96	278.53	280.37	278.22
	2nd ..	262.57	267.78	267.14	258.78	264.07
	3rd ..	226.06	247.83	233.61	209.64	229.28
No. of dependents	1st ..	3.33	3.45	3.41	3.09	3.32
	2nd ..	3.98	3.68	3.59	3.47	3.68
	3rd ..	4.01	4.13	3.97	3.82	3.98
Surplus or deficit (-) ... $	1st ..	92.74	82.96	93.07	112.25	95.25
	2nd ..	.....	.....	.....	.....	.....
	3rd ..	-49.65	-60.36	-56.74	-74.63	-60.34
Average daily earnings .. $	1st ..	1.86	1.76	1.77	1.82	1.80
	2nd ..	1.61	1.49	1.49	1.49	1.52
	3rd ..	1.54	1.51	1.52	1.43	1.50

It is curious to note the scale of number of dependents and of the days employed in these three divisions The former seems to ascend and the latter to descend as the scale of surplus falls. It is also due to the ability to earn a greater daily wage that the higher averages of surplus are obtainable, as is shown by the daily rate in each division. The average time employed in 1887 is lower than the annual average of the four years 1884-7 in each of the three divisions.

Taking workers without dependents in the same three classes we find the same peculiarity as regards time employed and earning power. The average ratio of the daily earnings of the three classes is 16:10:9 for the period.

Year.	Days employed.			Average daily wages.		
	1st.	2nd.	3rd.	1st.	2nd.	3rd.
				$ c.	$ c	$ c.
1887	274.92	268.79	248.17	1 23	0 86	0 74
1886	273.92	270.69	235.12	1 29	0 77	0 77
1885	279.15	277.99	218.11	1 24	0 79	0 74
1884	275.77	265.47	229.82	1 35	0 77	0 64
1884-7	275.94	270.73	232.80	1 28	0 80	0 72

Though the time employed in the first and second divisions remains nearly constant through the period the third class was employed on the average 13 days longer than in 1886.

The following is a general comparative table for the four years past, showing time employed, earnings, cost of living and surplus or deficit of workers with and without dependents, and the numbers of workers over and under the average surplus in each class.

Schedule.		With dependents.			Without dependents.			Total workers.		
		Average.	Over average.	Under average.	Average.	Over average.	Under average.	Average.	Over average.	Under average.
No. of workers.....	1887	1,951	742	1,209	1,403	521	882	3,354	1,271	2,083
	1886	1,722	705	1,017	962	386	576	2,684	1,079	1,605
	1885	1,605	652	953	1,032	391	641	2,637	976	1,661
	1884	1,859	610	1,249	994	352	642	2,853	1,005	1,848
Average per worker of—										
Dependents.....	1887	3.63	3.20	3.90	.....	.....	.....	.....	.....	.....
	1886	3.64	3.38	3.81	.....	.....	.....	.....	.....	.....
	1885	3.54	3.34	3.68	.....	.....	.....	.....	.....	.....
	1884	3.34	3.06	3.48	.....	.....	.....	.....	.....	.....
Days employed.....	1887	258.02	281.02	243.90	270.43	279.42	265.11	263.21	280.61	252.59
	1886	270.84	283.51	262.06	269.65	275.95	265.43	270.41	280.49	263.64
	1885	268.76	283.08	258.97	275.21	284.81	269.35	271.28	282.91	264.45
	1884	263.22	284.69	252.73	268.81	282.19	261.49	265.17	283.35	255.28
Earnings .....$	1887	448.08	545.89	388.05	299.66	408.85	235.16	385.99	481.55	327.68
	1886	450.00	524.40	398.42	307.20	422.66	229.81	398.81	479.44	344.60
	1885	447.60	529.35	391.68	297.46	424.87	219.74	388.85	484.00	332.93
	1884	430.95	536.28	378.30	294.20	433.68	217.73	383.31	489.28	325.68
Cost of living.....$	1887	411.74	419.09	407.23	243.31	269.75	227.70	341.28	349.65	336.18
	1886	412.34	407.94	415.40	239.40	268.30	220.03	350.36	347.64	352.18
	1885	401.17	403.69	399.45	225.71	254.40	208.20	332.50	334.77	331.17
	1884	390.28	400.07	385.49	230.11	263.96	211.55	334.47	342.72	329.99
Surplus or deficit (–) $	1887	36.34	126.80	–19.18	56.35	139.10	7.46	44.71	131.90	–8.50
	1886	37.66	116.46	–16.98	67.80	154.36	9.78	48.45	131.80	–7.58
	1885	46.43	125.66	–7.77	71.75	170.47	11.54	56.35	149.23	1.76
	1884	40.67	136.21	–7.19	64.09	169.72	6.18	48.84	146.56	–4.31

It will be observed that this table presents little variation in the figures for the respective years. In each year the minority exceed the average surplus and the proportion remains nearly constant throughout. Taking the class of workers with dependents, as the most valuable class for comparisons, we find that for those who fall below the general average surplus there is an average deficit each year. They also have a larger number of dependents to support; but the cost of living does not differ materially from that of the minority who manage to lay up a surplus. The wide range in the balance sheet sheet is, therefore, due to the greater time the latter are employed and to their greater earning power. As has been noticed, the time of employment for workers with dependents has been reduced nearly thirteen days from 1886. The bulk of this lost time has fallen to the lot of the majority who fail to obtain the average surplus, the time employed by the balance remaining nearly constant throughout the four years.

LEADING TRADES COMPARED.—In the following table five of the leading occupations are taken, representing over one-sixth of the total number of workers from whom returns have been received, and the averages of dependents, time employed, earnings and cost of living are given for each of the four years 1884-7, with a general average for the whole period :

Occupations.		No. of dependents.		Time employed.		Yearly earnings.				Cost of living	
		Total.	Under 16.	Hours per week.	Days in year.	Wages from occupation.	Extras.	Wife and minor children's earnings.	Totals.	Total.	Per capita.
						$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Blacksmith	1887..	2.76	1.82	58.95	270.80	435 66	5 50	6 39	447 55	390 32	103 93
	1886..	3.09	2.01	59.36	273.75	432 08	7 96	10 09	450 13	392 51	95 95
	1885..	2.58	1.67	59.05	272.77	418 42	4 13	16 28	438 83	368 43	102 87
	1884..	2.35	.....	58.19	269.54	428 32	2 91	6 36	437 59	376 02	112 27
	1884-7	2.70	1.83	58.89	271.72	428 62	5 13	9 78	443 53	381 82	103 33
Carpenter	1887..	3.43	2.29	53.41	240.01	411 34	6 13	12 17	429 64	398 53	90 00
	1886..	2.88	1.76	55.61	270.05	406 70	12 39	7 21	426 30	373 33	96 16
	1885..	2.98	1.95	57.47	262.05	424 01	6 42	9 55	439 98	379 11	95 18
	1884..	3.15	.....	57.78	256.28	409 34	3 37	14 43	427 14	376 34	90 80
	1884-7	3.11	2.00	56.07	257.10	412 85	7 08	10 84	430 77	381 83	92 90
Machinist	1887..	2.50	1.68	57.24	267.61	432 64	8 15	9. 86	450 65	374 45	106 98
	1886..	3.07	2.00	59.38	278.72	463 72	11 62	13 00	488 34	410 79	100 83
	1885..	2.62	1.78	58.02	264.67	452 97	4 29	9 68	466 94	383 50	105 98
	1884..	2.84	.....	58.63	255.26	417 22	6 25	6 01	429 48	381 32	99 04
	1884-7	2.76	1.82	58.32	266.57	441 64	7 58	9 63	458 85	387 51	103 13
Moulder	1887..	3.41	2.19	58.35	252.66	493 23	6 42	13 67	513 32	437 55	99 30
	1886..	2.90	1.78	56.74	254.74	493 91	4 23	1 17	499 31	447 04	114 74
	1885..	2.84	1.89	57.61	244.90	473 51	3 40	3 86	480 77	411 99	107 30
	1884..	2.40	.....	57.61	249.54	434 92	2 34	3 95	441 21	393 27	115 55
	1884-7	2.89	1.95	57.58	250.46	473 89	4 10	5 66	483 65	422 46	108 67
Painter	1887..	2.45	1.73	57.84	244.38	393 94	7 71	3 66	405 31	357 16	103 66
	1886..	2.48	1.52	57.05	253.35	381 22	8 25	4 67	394 14	362 48	104 06
	1885..	2.53	1.57	58.43	256.99	410 31	6 05	7 67	424 03	369 31	104 73
	1884..	2.75	.....	58.10	252.12	399 36	12 52	5 11	416 99	367 75	98 00
	1884-7	2.55	1.61	57.86	251.71	396 21	8 63	5 28	410 12	364 18	102 51
Average for the five occupations.	1887..	2.95	1.98	56.46	252.96	425 90	6 77	9 41	442 08	389 17	98.61
	1886..	2.91	1.83	57.44	268.03	434 70	9 65	7 69	452 04	395 54	101 12
	1885..	2.77	1.82	57.99	260.63	436 03	5 11	9 32	450 46	382 88	101 46
	1884..	2.77	.....	58.04	256.10	416 89	5 01	8 32	430 22	378 76	100 40
	1884-7	2.85	1.88	57.48	259.43	428 38	6 63	8 69	443 70	386 59	100 41

The most noticeable variation in the figures for 1887 from those of the preceding year is found in relation to carpenters, who worked 30 days less, while their total earnings were slightly greater. This might be ascribed at first sight to a general increase in the rate of wages, but in reality it is due to the unusual proportion of carpenters returned from Toronto, where so much time was lost owing to the lengthened strike. The higher rate of wages in the cities, and in Toronto especially, has not diminished the provincial average though the time employed is less. Machinists did not fare so well, for while their work-

ing time was less by 11 days than in 1886, their gross earnings also fell off by nearly $38. Moulders, with employment for about the same length of time as in 1886, earn an average of $14 more in the year, which, however, is mainly due to the increase in the earnings of wife and children. Painters were employed on an average 9 days less in the year, and earned $11 more. The average number of hours worked per week by all five trades has been reduced by about one hour per week, and the number of days in the year by 16, while the average of earnings for the year is less by $10. Compared with the figures for the four years' period, the average number of days of employment per worker in the year is reduced by about seven days, machinists and moulders only showing an increase. The cost of living per capita was somewhat lower in 1887 than in any of the preceding three years. In this table the number of dependents is arranged over the whole number of workers.

The workers returned as belonging to these five trades are next divided into those with dependents and those without, and statistics under the same heads are presented for the two classes for 1887 in the following table :

Occupations.	No. of workers.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living	
		Total.	Under 16.	Hours per week.	Days in year.	Wages from occupation.	Extra.	Wife and minor children's earnings.	Total.	Total.	Per capita.
Blacksmith :						$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
With dependents...	69	3.59	2.38	58.67	274.77	449 15	6 60	8 33	464 08	423 66	92 22
Without dependents.	21	.....	.....	59.86	257.76	391 32	1 90	.....	393 22	280 76	.....
Carpenter :											
With dependents ...	163	3.98	2.66	53.47	240.66	418 09	6 49	14 12	438 70	416 06	83 62
Without dependents.	26	.....	.....	53.04	235.88	369 03	3 85	.....	372 88	288 63	.....
Machinist :											
With dependents ...	77	3.83	2.57	56.84	271.03	448 47	9 82	15 12	473 41	419 39	86 81
Without dependents.	41	.....	.....	57.98	261.20	402 90	5 02	.....	407 92	290 04	.....
Moulder :											
With dependents...	55	3.96	2.55	58.30	251.25	498 41	6 56	15 91	520 88	454 17	91 50
Without dependents.	9	.....	.....	58.67	261.22	461 56	5 55	.....	467 11	336 00	.....
Painter :											
With dependents ...	69	3.58	2.54	57.23	246.06	407 92	9 26	5 36	422 54	400 13	87 37
Without dependents.	32	.....	.....	59.16	240.75	363 78	4 38	.....	368 16	264 50	.....
Average for the five trades :											
With dependents ...	433	3.82	2.56	56.11	253.70	437 02	7 55	12 21	456 78	420 17	87 09
Without dependents.	129	.....	.....	57.63	250.46	388 58	4 15	.....	392 73	285 12	.....

In this table there is for the five trades practically no difference between the average time employed during the year by the two classes of workers. Workers with dependents have the advantage in time employed in four of the five trades selected, the difference in the case of blacksmiths reaching 17 days. As would be expected, those with dependents have a considerable advantage over the younger and less experienced class in earning power. The cost of living, on the other hand, is of course greater in the case of a worker with a family of dependents than for a single man. There is considerable range in the cost of living per capita between the different trades, carpenters being the lowest with an average expenditure of $83.62 per capita, and blacksmiths the highest of all, at $92.22.

RELATIONS OF WAGE-EARNERS TO EMPLOYERS AND EMPLOYMENT.—The questions given below were sent to collectors appointed by the Bureau, with instructions to make as thorough an enquiry as possible into the subjects coming within their scope. It will be seen that the topics dealt with are those most directly touching the interests of the working classes, such as wages, health and safety of workers, juvenile labor, condition of trade, hours of labor, strikes and lock-outs, organization, opportunities for mental improvement and kindred subjects. A summary of the replies follows, and the reports of collectors are quoted freely so far as they relate to the matter in hand.

1. PAYMENT OF WAGES.—(1.) Is there a fixed pay-day for wages of workers? and what day? (2.) How many pay-days in each month? (3.) Is the full amount of workers wages paid each pay-day? (4.) What proportion, if any, is reserved by the employer? and for what object is it reserved? (5.) Are wages as a rule paid in cash.

2. ACCIDENTS TO WORKERS.—(1.) Are any accidents reported for the year? (2.) How many? and what has been the nature of each? (3.) How many have resulted fatally? how many have resulted in permanent injury? and to what cause were they due in each case? (4.) Is machinery so protected as to prevent accidents, with reasonable care on the part of the workers?

3. HEALTH AND SAFETY OF WORKERS.—(1.) What is the general condition of the health of workers? and how in this respect do in-door and out-door workers compare? (2.) Has any epidemic or contagious disease broken out in the families of workers? and if so, what kind of disease, what were its consequences, and to what is its origin ascribed? (3.) Is there a proper ventilation of workshops or factories? (4.) Are wash-rooms and water-closets provided for the convenience of workers? and separate ones for each sex? Are they kept in a proper state of cleanliness? (5.) Is the water supply ample and of a good quality for drinking? (6.) Are adequate means of escape provided in case of an outbreak of fire? (7.) Are the doors of factories or shops locked or bolted during working hours? (8.) Are any numbers of children under 14 years of age of either sex, girls from 14 to 18 years, or women employed in factories or shops? If so, how generally, in respect of each of the three classes? and to what cause or causes is their employment ascribed? Is it owing in any degree to the dissipation of fathers of families?

4. RUNNING TIME OF SHOPS AND FACTORIES.—(1.) Have factories or shops been idle for any part of the year? and if so, how long and for what cause? (2.) Have workers been idle for any cause except the closing of factories or shops, or (in the case of out-door trades) the state of the weather? Have they been able, as a rule, to find steady employment? (3.) Is it the custom to keep factories, shops, etc., open the same number of hours for each day of the week? If any portion of Saturday is given to workers, how much? and are the full day's wages allowed?

5. SHORT HOURS OF LABOR.—(1.) In what trades (if any) have the hours of daily or weekly labor been shortened during the year? and to what extent have they been shortened per day or week? (2.) What have been the results to workmen—(*a*) as to reducing the number of persons out of employment; (*b*) as to increasing the number of days employed during the year; (*c*) as to conduct and character? (3.) State whether it is regarded as an advantage to the working classes to shorten the hours of daily labor and increase the number of days employed in the year, and the respects in which it is advantageous, or otherwise. Does it tend to ensure a livelihood for the family throughout the year and to promote economy of living, or does it in any degree tend to idle and dissipating habits? (4.) In what way do workers improve the opportunity afforded by the shorter hours of daily labor?

6. INDUSTRIAL STRIKES OR LOCK-OUTS.—(1.) Have any strikes or lock-outs occurred during the year? and if so, what trades have been affected by them? (2.) What was the cause in each case? and if settled, upon what terms and through what agency—arbitration, conciliation or otherwise? (3.) How many workers were affected in each case? how long were they out of employment? and what amount of earnings was lost in consequence?

7. ORGANIZED LABOR.—(1.) Is labor organized in your town? if so, how many organizations are there, how many members are enrolled in each, and what trades or occupations do they represent? (2.) Is female labor organized as well as male, and are there separate organizations? Give details as to number, membership and occupation? has the number increased or decreased during the year? (3.) What has been the effect (if any) of organization on the rate of wages? (4.) What part (if any) has organized labor taken in strikes or lock-outs? (5.) How much has been expended by each organization on strikes and lock-outs?—(*a*) In your own town; (*b*) In all other places? (6.) How much has been expended for benevolent purposes?

8. READING-ROOMS AND LIBRARIES.—(1.) How many reading-rooms or libraries in your town? (2.) How long have they been established and how are they maintained? (3.) During what hours are they open, and to what extent are they patronized by the working classes?

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1. PAYMENT OF WAGES.—The replies of all the collectors indicate that the system of a regular pay-day prevails, but each establishment appears to have its own favorite date and mode of paying its hands. Where the wages are handed over weekly, Friday and Saturday are the most popular days for paying up, although Monday and sometimes Tuesday are also chosen by some employers. In the larger concerns the plan of paying semi-monthly is becoming more general, and in the case of great corporations the

employés are usually paid monthly. While those in receipt of weekly wages are, as a rule, paid up in full, workingmen paid fortnightly or monthly have usually from six to twelve days' pay held back. It is claimed that there is a two-fold object in this plan: first, to facilitate the work of checking the pay sheets, and second, to provide against artisans quitting their employment without giving due notice. The old system of taking "truck" for labor, or paying in storebills, is becoming extinct. Our London collector makes the following terse comment on this point: "The old barter business is about entombed without any prospect of resurrection." Here and there it would seem that employés are paid a portion of their earnings in goods, but it is usually to receive some of the necessaries of life at wholesale rates, and is generally done as a favor to the worker.

Almonte collector: On entering the mill a person has to serve two weeks without pay, and when leaving employment the pay for that time is given to him or her. I think it is so that a person has to give a month's notice before leaving.

Cornwall collector: Usually two pay-days occur in each month. There are workshops, however, where but one pay-day in each month is recognized. From 10 to 15 days' pay is retained by the company or employer. The object the companies have in view, as I understand it, is (1) To compel the help in their employ to give two weeks' notice before leaving, and (2) For convenience in making up the time of the employés. But while the cotton companies insist upon their employés giving two week's notice before quitting their employ or forfeit two weeks' pay, they as employers claim the right to discharge any of their hands without giving a moment's notice, and they then pay the discharged employé only the amount due for labor performed up to the hour of dismissal. Wages are always paid in cash, and the full amount due, less the back time and fines imposed by the company, is given each pay-day.

Hamilton collector: In the spring of 1886 those engaged in the building trades petitioned their employers for weekly payments and on Fridays, but after repeated interviews with builders and others interested the matter was dropped. It is worthy of note, however, that the workingmen used the best arguments in favor of Friday as a pay-day. They claimed that advantage could then be taken of Saturday's markets, and that the purchasing power of their money was greater earlier on Saturday than later in the day; and further, that in the case of meats, garden stuff, etc., the supplies to be purchased in the evening were generally the culls of the market.

Oshawa collector: Wages are usually paid in full weekly or fortnightly, but in the Malleable Iron Works and one or two other establishments there is a reserve of one week's wages held. This, it is claimed, is for the convenience of the book-keepers in making up the books.

St. Catharines collector: Pay-days are weekly, fortnightly and monthly, according to occupation. Millers, street car conductors and drivers, stone-cutters and quarrymen are usually paid monthly. The Whitman-Barnes Manufacturing Co. reserves all each employé earns over $10 per week. The object is to tide the men over the time when the works are shut down—about four months in each year. They can, however, get their money any time they demand it.

Stratford collector: In all the industries of the city a fixed pay-day exists, but the pay-day in the different establishments varies very much. In some cases payment is made in full each Saturday night, while in other cases one week's wages are held back in order to give the time-keepers and book-keepers an opportunity to make up the pay-sheet. In one shop payment is always on the 4th of each month, except that day falls on Sunday, when they pay on the 3rd. In the G.T.R., the largest institution in the city, pay-day is between the 15th and 20th of each month, and the money due for the days from the first of the month to pay-day is withheld. This seems to be unavoidable, owing to the fact that the pay-rolls have to be sent to the head office at Montreal, previous to the starting out of the paymaster upon the road. Wages are all paid in cash, except in some few cases, where by mutual agreement parties working where produce, provisions, clothing, etc., are the stock in trade may receive sometimes to their advantage goods in lieu of cash.

Toronto collector: Where wages are reserved by employer, the sum is one week's wages generally. This reserve is upon the plea that the employer may have time to make up the books, or to prevent employés leaving without giving notice. As a rule, however, the employer discharges those in his employ without any previous notice. In many instances employés are not told that they are discharged—they are "laid off" indefinitely. Wages are paid in cash; I heard of no instance to the contrary.

2. Accidents to Workers.—The replies of collectors to enquiries under the above heading are, on the whole, of a favorable nature. The number of accidents reported is relatively small, and those which proved fatal were generally more attributable to the carelessness or recklessness of the victims rather than to any neglect on the part of employers. Most of the accidents were of a trivial sort, although casualties of a serious nature were reported in the cotton mills at Cornwall, one of which resulted fatally and five wrought permanent injury. Complaint is made by our collector in that town regarding the dissatisfaction expressed by work people with the character of official inspection of the cotton factories, and more frequent and closer inspection of the cotton mills is also desired by the Hamilton collector. It is pleasing, however, to note that the majority of the collectors are of opinion that machinery is generally adequately protected. The accidents most frequently reported took place in wood-working shops, and resulted

generally from the operator's hand coming in contact with the circular saw, the buzz planer or the treacherous shaper, machines against which it is almost impossible to secure a full measure of protection.

Cornwall collector: Accidents frequently happen in the mills of this town; as many as fifteen accidents have occurred during the year. One resulted in death and five in permanent injury. Opinion is divided as to the responsibility, although it is generally declared that had the machines on which the operatives were working been in proper order, with the gearing properly covered, etc., the accidents would not have happened. In cases of accident such as these damages are not claimed, neither are they given, and in all cases the pay of the person or persons injured is stopped from the time the accident takes place till the operative is again at work. In most cases the machinery is so protected that were the help properly instructed accidents would not happen. Still there are many machines running in the different mills here that, owing to the gearing, belting, etc., not being properly covered, are dangerous for even well instructed people to work about.

Guelph collector: In all the factories here the machinery is protected as far as is consistent with its utility. The shaper is the most dangerous piece of machinery there is in a woodworking shop.

Hamilton collector: Machinery as a rule is fairly protected, but more safeguards are necessary. It is the general expression of operatives (particularly in the cotton factories) that the inspectors should visit the factories more than they have done. Objections have been raised to the collector examining machinery, belting, etc., complained of.

Oshawa collector: The accidents from burns are remarkably few in view of the fact that from thirteen to fourteen tons are daily cast in small ladles which have to be handled very rapidly. Use appears to be second nature, as the men handle the molten fluid like so much water. The machinery for the most part is fairly protected, but it would add to the comfort of workmen if fans were attached to sand drums, emery wheels and belts to carry dust away. Curriers should also work in a separate building from that in which the tan bark is ground.

St. Catharines collector: One man was killed and two permanently injured while working in a derrick. Defective machinery and rotten timber were the cause of the casualty.

Stratford collector: Although a number of accidents have occurred on the G. T. R. to men living here, they happened out of the city at other points on the line Machinery is quite as well protected as it is necessary to have it, and most of the accidents that occur are the result of carelessness on the part of the workers.

Toronto collector: In the great majority of instances machinery is fairly protected with the view of preventing accidents. The existence of a Factory Act has had much to do in influencing in this direction.

3. Health and Safety of Workers.—The general state of health of workers during the year was quite favorable, and but little difference was reported between the physical condition of those employed indoors and those engaged in outdoor occupations. One collector was informed by a medical man, a member of the local board of health, that the reason outside workers were not in much better physical condition compared with those working inside was that as a rule the former did not take as much care of themselves as did the latter, and often suffered from needless exposure. In several towns and cities cases of diphtheria, typhoid fever and other contagious diseases are mentioned, but none of them are ascribed to lack of sanitary regulations about factories or workshops. In London an outbreak of diphtheria among children is charged to the school, which was in the neighborhood of a swamp, and in Ottawa it is claimed that the "aristocratic classes" of the city suffered more severely than the working people during the epidemic of typhoid in the autumn. There is not much complaint as to lack of ventilation, although it is plain that it would be easy to improve matters in that respect. However, as one collector very practically points out, there is little use asking for better means of ventilation until workingmen and women use to its fullest extent the means now placed at their disposal. Comfortable wash-rooms for employés are not as general as they should be, and but little provision is made for separate wash-rooms for the two sexes. Separate water closets for males and females are the rule, although a few instances are given by collectors where the one place is used by both sexes; and again where a thin board partition perforated by jack-knives gives but a nominal privacy to the closets devoted to the male and female employés respectively. Taken altogether, however, there appears to be an improvement in this respect over previous years; common decency is steadily asserting itself. In most instances good water is reported, except in some towns without any water works, where both the quantity and the quality of the water got very low during the summer owing to the prolonged drouth. In only a few factories is special provision made for escape in case of fire. Elliott's woollen mill, Almonte, and one factory in Galt are each provided with a good fire escape, but they are exceptions. Only one or two instances are given of shops or

factories being locked or bolted during work hours. Since the Factory Act came into force there has been less employment of children of tender years, but it is apparent that there is yet room for improvement. So great a variety of opinion has been expressed by collectors as to the causes of children and young women going out to work in shops and factories, that the remarks made on this subject are quoted in full below.

Almonte collector: Some children under fourteen are working, and a good many girls between fourteen and eighteen. They work in order to earn a living. In some cases, but not very many, it is on account of the dissipation of fathers of families.

Belleville collector: There are not more than twenty girls working in factories in the whole city. They are between fifteen and eighteen years of age and are employed in the knitting factory and shirt factories. I cannot ascribe the cause in every case, but generally these young girls are driven to work to support themselves and a widowed mother.

Brockville collector: No children under fourteen years of age are employed in our factories, and but very few women of any age. The only place employing female labor to any extent is the glove works. The chief cause of these being employed is that their parent or parents are dead. Occasionally the necessity for their working is brought about by drunkenness on the part of the father or husband.

Chatham collector: In the pickling and canning works there are from fifty to seventy hands employed from July 1st to November 1st. Men, women and children, black and white—sixty hours per week. Boys and girls get about 60 cents per day, and men about $1.25. Three men and four women work all the year round. I think fully half the hands (of both sexes) are under eighteen years of age, and perhaps a dozen under fourteen years. It is not in any way due to dissipation of parents here, and the work is not as laborious as in woollen or other factories where female labor is employed. During the dull summer season this factory is a resort for people out of employment, through regular work being slack. The situation is a nice locality for workers.

Cornwall collector: Many children under fourteen years are employed, a large number between the ages of fourteen and eighteen, and many women. The reason of their employment is mainly because the wages paid to heads of families are insufficient to maintain all without the aid of the children. Then again, female help in many cases takes the place of male help, and they are hired at a less figure. There are very few cases where the employment is due to the dissipation of the father.

Galt collector: There are very few, if any, children under fourteen years of age employed here. In the factories there are many of both sexes employed between the ages of fourteen and eighteen. In some cases it is owing to the dissipation of the father, but mostly on account of the wages laboring men receive being inadequate to support a large family.

Gananoque collector: In the majority of cases the employment of boys and girls is not occasioned by the dissipation of their fathers. There may be a few cases.

Guelph collector: Children are not employed to any great extent here. There are some girls and women employed, chiefly in the woollen mills and at sewing machines, as many prefer it to household service. In no case have I learned that dissipation of parents was the cause.

Hamilton collector: Some of the carrier boys in the glass works are under fourteen, and some are reported in the cigar, tobacco, box and cotton factories. Girls from fourteen to eighteen are employed in nearly all branches of female labor, in shops and factories. Many causes are assigned, principally through being fatherless or through the dissipated habits of the parents.

London collector: I have not found any children under fourteen employed. Almost all the lighter work is done by girls, boys and women. In some cases the dissipation of parents is the cause, but in most cases it is because they want to earn a living for themselves and assist their parents.

Oshawa collector: A number of boys are employed from the age of twelve up, and before the Factory Act went into force some were at work even younger. Girls of fifteen are at tailoring and such like work. The small wages paid the family bread-winner and the desire of employers to hire cheap labor are the causes. The iron moulders' union has a law strictly adhered to as follows: Only boys between the ages of sixteen and twenty-one shall be allowed to learn the trade of moulding.

St. Catharines, collector: There are very few children under fourteen employed. The reason why girls are employed almost exclusively in shops and factories in which the work is light is because they come cheaper. I doubt if there is one girl or woman in a shop or factory in this city who is compelled to work on account of the dissipation of her father.

Stratford collector: There are very few at labor under fourteen years of age, and it is not easy to find out the cause of their being at work so young, except that they want to be earning something for themselves.

Toronto collector: The general condition of the health of workers has been good, but I find that young women and girls who work in factories (especially in paper box and envelope making) suffer through failing health, due mainly, I assume, to being compelled to stand continuously during working hours. The number of washrooms in workshops and factories is not as large as the circumstances call for. Water-closets are provided in nearly all cases, and where females are employed there are separate compartments, although in some cases the divisions are not as complete as could be desired. In numerous cases there was complaint of lack of cleanliness in the water-closets. In many instances the means of escape in case of fire are very inadequate. Only in a few cases are the doors of factories locked or bolted during work hours, and then only for a given time after 7 a.m. and 1 p m. each day. I found no children under fourteen years of age at work, but heard that some were employed. In the boot and shoe factories, corset factories, paper-box and envelope factories, shirt factories, broom factories, bookbinderies and in the tailor shops large

numbers of females from fourteen years of age upwards are employed. Where children under fourteen years of age are found at work, the cause is evidently the poverty or the cupidity of the parents. As to those females over that age, many work through necessity that they may live, others that they may help their parents, while no inconsiderable number are daughters of country farmers who prefer city life and fixed hours of work, even at low wages, rather than remain at home on the farm. Young women and girls are also employed where practicable because they can be had for much less wages than men can be hired for.

4. Runnng Time of Shops and Factories.—The statements of collectors in response to the first query under the above head go to show that among inside workers comparatively little time had been lost during the year, except where factories were closed for repairs or for lack of water. In fact, with the exception of Oshawa, Gananoque and one or two other places, full time was the rule. Outside workers, however, especially those engaged in the building trade, had a great deal of off time, although Toronto and Ottawa were exceptions to the general dulness in that line. There is no uniform rule as to working hours. In Toronto the Saturday half-holiday is common, particularly among those trades that are organized, and in other cities and towns the plan is meeting with favor. In the smaller places, however, the sixty hours a week rule prevails, and those workpeople who get off a few hours earlier on Saturday have to make up the time during the week; otherwise they work the full ten hours on Saturday. In some establishments, however, the hands are let off an hour earlier than usual on Saturday, and in only a few instances are they now "docked" for it. A rather novel plan is practised in the city of Hamilton by certain of the retail stores, where the clerks are given a half-holiday on Wednesday, as they do not share in the more popular Saturday half-holiday.

Almonte collector: Factories are opened at 6.30 a.m., and closed at 6 o'clock, with an intermission of one hour at noon; but on Saturdays work ceases at 3.30 p.m., and the full week's wage is allowed.

Belleville collector: Four or five factories ran on three-fourths time during the winter, owing to scarcity of orders. Workers quit at 5 o'clock on Saturdays and are allowed a full day's pay. An agitation is on foot among carpenters to introduce the nine hour system and half-holiday on Saturday, with the same wages as at present, but contractors and employers would not accede this year as many contracts had already been made.

Brockville collector: Factories and shops have been running full time for the most part, excepting where closed down for repairs, etc. Employment for those engaged in the outdoor trades has been rather limited, and had it not been for the building of the B. W. & S. S. M. Railway would have been still more so. Factories and shops keep open ten hours every day, Saturdays included.

Carleton Place collector: The factories closed on Saturdays at 1.30 in the summer and at 4.30 in winter, but the workers have to make up the time with 30 minutes every day to make the full week.

Cornwall collector: Often during the year the cotton mills cause their help, male and female, and some of them boys and girls of tender years, to work from 6.30 a.m. to 9 p.m., and when this is the case no time is given for supper. Many of the employés carry a lunch, but most keep their machinery running while they eat their food. The help fear to protest against this system lest they lose their situations for so doing. If they refuse to work overtime they are discharged. It is the custom of factories to run ten hours per day for the first five days of the week, and five and a-half hours for Saturday.

Galt collector: Workers generally have found steady employment. It is the custom to stop work sooner on Saturday than on other days. A number of places close at noon, but the workers get no part of the time; they make it up during the week.

Gananoque collector: One of the largest establishments, the Gananoque Carriage Co., using steam power, is idle about two months per year in the winter, and the greater number of the factories running by water are compelled to shut down about two or three months in summer on account of low water. All the factories allow half an hour per week, stopping at 5.30 p.m. A full day's pay is allowed.

Guelph collector: The past year in this city has been a very good one, in fact better for many years both for indoor and outdoor workers. The sewing machine business has not been very good, but this is the only exception. Some of the factories have worked overtime, and what there was lost was for necessary repairs. Some of the shops close at 1 o'clock on Saturday during the summer months, making up the time during the week. All the others work nine hours per day on Saturday, pay being given for ten hours (the regular day.)

Hamilton collector: Factories and shops have been fairly busy, except in the case of customs tailors and the iron moulders. None are reported idle for any length of time. Very few employés in factories, shops or warehouses work on Saturday afternoon, especially during the summer. In some few cases the full wages are allowed, but the majority of workers having the Saturday half-holiday lose the time. In the cotton factories the lost time on Saturday is made up by the operatives during the week previous. Such is the case in the G. T. R. worshops and one or two smaller shops. Among clerks, salesmen and saleswomen the Wednesday half-holiday is the rule, and the dry goods, clothing, hat, gents' furnishings and millinery stores, with a few groceries and provision stores, close up business then. The employés do not lose the time.

Kingston collector: The Kingston cotton manufacturing company work generally continuously, but they are governed by the cotton combination. Generally ten hours per day are spent in working. The employés go off at noon on Saturday, but are paid only for the time they work.

London collector: Agricultural implement factories have been unusually dull and were shut down two months in the early part of the year. Cause—over production. The year was unusually dull all around. One builder told me he had lived in London for eighteen years, and as a rule could find employment for two or three men at least until this year, and he has had no work for about six months. Some are now allowing half a day on Saturday. The bosses pay the employés for one half of the lost time and the employés lose the other half.

Oshawa collector: Factories and foundries as a rule cannot be said to run very steadily in this town, although there are some exceptions, notably the Malleable Iron Works, which were run continuously last year with the exception of ten days for necessary repairs. There are times in both summer and winter when quite a number of mechanics have either to remain idle or seek employment elsewhere. The running time is the same each day except Saturday, when the establishments close at five o'clock. Employés are paid the full day's work.

Peterborough collector: Factories and shops have been kept busy as a rule during the year. They generally shut down once a year for repairs. There is one woollen factory here that runs night and day with two gangs. The past year was dull for outside workers. They had a lot of lost time for want of work. It is the custom for those in all the trades to work ten hours a day except Saturday, when all quit work at five o'clock; but they must make it up during the week by working ten minutes longer during the day, going to work at ten minutes to one o'clock.

St. Catharines collector: Factories and workshops are closed from one to four hours on Saturdays.

Stratford collector: One shop was closed for seven weeks, commencing the second week in October. Cause—too much manufactured goods on hand at the close of the selling season. A large number of house carpenters, bricklayers, stonemasons and plasterers have been idle during the late fall and winter months, and a few found employment at other work. It is the custom to run shops the same number of hours each day, and no time is given to workers without being deducted from the week's wages.

Toronto collector: Each year almost every factory and shop of any considerable producing capacity closes for repairs, cleaning up, etc. The time thus occupied usually runs from three to six weeks. Owing to depression in trade in several cases the time referred to was extended by several weeks in Toronto during last year. Where the idle time was not so extended work was carried on or resumed with reduced number of employés. The prevailing system is to work ten hours a day, although in some instances the Saturday half-holiday is granted, with the consequent loss of pay. Where work ceases at five p.m. on Saturday the time is not charged to the employés as a rule.

5. Short Hours of Labor.—Shorter hours of work during the year has been reported from several cities and towns. With the exception, however, of the carpenters and painters of London and most of the trades of St. Catharines, there has been very little shortening of hours for a full week's pay. In nearly every case except those specified, the shorter hours were accepted as an alternative of closing down for a time. The result of the shorter hours plan appears to have been favorable. The morals of workers were not noticeably injured, while it is claimed that health and happiness have been aided. Married men especially are said to use to advantage the extra time at their disposal in improving their homes, etc., but many of the younger men do not appear to utilize the time thus offered them for the development of mind and character. Several of our collectors point out very forcibly the benefits accruing from regular work with shorter hours as opposed to spasmodic employment at a seemingly much higher rate of wages, and maintain that economy is encouraged by the former system. Even allowing for a dash of sentimentality in some of the reports of collectors, it is quite evident that, where tried, shorter hours have proved of benefit to the average toiler physically, mentally and socially, although some may not have availed themselves of the blessings to be found in the wise use of the extra time placed at their disposal.

Chatham collector: Shortening the hours of labor is done to suit the convenience of employers, and does not invite the unemployed. As a rule the suggestion is not popular; most men would prefer to work full time and take chances of getting employment when regular work ceases. When hours were reduced and places shut down here, there was no apparent bad effect on conduct or habits.

Cornwall collector: The hours of the workers of this town have not been shortened at any trade or calling during the year. However, the general opinion of workers as expressed is that shorter hours of labor would tend to promote health, and that shorter hours would also be an advantage to the working-classes, insomuch as it would give steadier employment to more persons, increase the number of days employed, and allow more time for the study of religion, art, mechanics, social economy, and, in fact, all branches of useful information. It would also give to the workers more time for recreation, more time to devote to gardening, more time to spend in beautifying and improving their homes, more time to spend with their families, and more time to aid in the education of their children.

Galt collector: No trade has had the hours shortened as a general thing, only some establishments have reduced the time by two hours a week. The Saturday half-holiday has been in operation only half the summer.

Gananoque collector: The outside trades have shortened their time by one or two hours.

Guelph collector: Shorter hours would give more even employment to all, allow workers more time to recuperate, to get acquainted with their families, and improve mind, body and estate. As it is they go to bed tired, get up tired, and become subordinate to the machine they have to tend and not its master. When the workers have Saturday afternoon in the summer they can do little jobs of work for the improvement of their homes or get an airing for themselves and families, do their marketing in time and get all necessary work done.

Hamilton collector: The effects of shortening hours of labor in this city have been beneficial. Bricklayers and masons, iron-moulders, carpenters, laborers, cigarmakers and other bodies report very favorably as to the results of the shortening of the hours of labor, as it tends to give more steady employment to workers, reduces the amount of trade competition by giving work to surplus labor, and increases the number of working days during the year. It does not tend to dissipation; in fact, the reverse is reported by the unions, which declare that dissipation is on the decrease. Many report that they do not experience that exhausted feeling formerly felt when the day's work is finished, and are in a better condition than under the old system to perform the duties of the coming day.

Kingston collector: I cannot say that the hours of labor have yet been shortened in any particular trade. The locomotive works, the car works and smaller industries were closed during last year at five o'clock on Saturday afternoon. The cotton and knitting mills were closed at one o'clock on Saturday, but the employés worked for eleven hours on each of the five preceding days. Last month the Locomotive Works Company and men entered into conferences in regard to closing down on Saturday afternoon. The option was given the men of working overtime in order to make up in wages the loss they would sustain by the half-holiday. The men decided in favor of shorter hours on Saturday, and they will be had during the summer months. The change it is hoped will be permanent. Even if only temporary the experiment will have an effect upon other shops and tend to shorten the hours of labor. The Locomotive Works' men asked another favor—the return of pay to them for the hour on Saturday which they did not work. This pay they had formerly. The management gave an equivalent, viz.: a quarter of a cent per hour of work all round. The nine-hour movement is not destined to affect the men financially very long. The sacrifice will be felt for a time, but in the long run wages will "even up," and the men will make as much and save as much as they do now. The workingmen think it highly desirable that they should have more time for recreation, for social enjoyments and for mental and physical improvement.

London collector: Carpenters and painters for the most part have had their time shortened one hour per day. Shorter hours of work are of advantage to the toiler, as they give the married man more time at home in summer to cultivate his garden and lawn, and otherwise improve his property, and to assist the mother in the development and culture of their children, that she, too, may have more time for social enjoyment and recreation, and lead them to think that it is not all of life to grub for an existence, and that there is a drop of pleasure in the ocean of life. I am afraid I cannot speak thus of many of our young men. Their tendency to gamble and drink and sport forbids that.

Oshawa collector: The hours of daily and weekly labor in every industry throughout the town are much the same as in the preceding year, the ordinary full time being ten hours. Among piece workers the time is generally about nine hours, but they will do as much work in that time as in the case of day workers. It cannot be said that the leisure afforded by shorter hours per day increases intemperance, as is sometimes the case where weeks and often months of enforced idleness leave the mechanic with too much time on his hands. Those who are most eager for reducing the hours of labor are as a rule the best educated and most intelligent of the working class, and those workers who oppose it are generally the reverse.

St. Catharines collector: The working time of painters has been shortened two hours per week; tanners one hour per week; carpenters, plumbers, tinsmiths and gasfitters one hour per day. The effects have been beneficial in each particular of morality, education and health.

Stratford collector: Hours have been shortened in the following occupations: House carpenters, agricultural implements and other woodworkers, and also machinists and blacksmiths—some to nine hours a day and others to three-fourths time, viz., seven-and-a-half hours per day. It has caused them to be a little more economical, and has had the effect of keeping on more of the regular staff of hands. I believe it has served a better purpose than shutting down altogether for a time, on the principle that half a loaf is better than no bread. It would be much better to have a shorter day all the time (say nine hours), and give work the year around, than run irregularly at longer hours per day. I do not find that shorter hours tend to idleness or dissipation. I have noticed a great deal of improvements made by workmen to their houses during the past year.

Toronto collector: There has been no change in the daily or weekly hours of work in any of the trades during the past week. An effort to gain a nine-hour day was made by the carpenters, but they failed after a strike lasting ten weeks. The beneficial effects of the shortening of working hours in this city have been: (1) A reduction of the number of idle men in the market, although that market is being continually replenished with destitute emigrants from Great Britain and the continent. (2) By increasing to some extent the number of working days in the year where the system prevails. (3) In the elevation of character, owing to the greater time available for reading, ready material being found in the daily newspapers and in the free reading rooms of the public library, which has three branches in convenient parts of the city. And besides these great advantages there is the no less greater one of being able to spend some part of the day within the family circle, or take an outing in the many easily accessible country places adjacent to the city, the reaching of which costs comparatively little. There is no difference of opinion in the minds of the working classes as to the great advantages arising from a shortening of working hours, and

thereby increasing, if possible, the number of working days in the year, as steady work throughout the year at fair wages is much more advantageous than a more limited working time at what would appear on cursory observation, very high wages. The steadier the employment throughout the year the more secure is the livelihood of the family, and its economy lies in the fact that those who have steady work and regular pay are not so frequently obliged to seek credit for the necessaries of life as are those who are idle at intervals. Steady work at short hours does not tend to idleness or dissipation;—the result is the very opposite, as already explained.

6. Industrial Strikes or Lock-outs.—Strikes occurred in about half the towns and cities reporting, but only in Hamilton, London and Toronto did the differences between masters and men cause any serious break in the time of labor. There was a lock-out in Cornwall, by which 18 dyers in the cotton mill suffered. The great strike of the carpenters, plasterers and lathers in Toronto will be a memorable one in the annals of labor, the loss in wages alone being reckoned at $84,000. The strikes in London made a loss in earnings of some $10,650. The particulars of the various strikes will be found in the reports of the collectors which follow.

Belleville collector: A strike occurred in the Waterworks among drillers and shovellers on account of the sharp system of "docking" practised by foremen when laborers were doing as much work as should be expected of them. The strike only lasted a few days, and the laborers went to work at the old figures.

Cornwall collector: A lock-out occurred at the Stormont cotton mills during the summer of 1887. Eighteen men engaged as raw cotton and cotton yarn dyers asked for a reduction of the hours of labor from ten to nine hours per day, and as a consequence were ordered by the manager from the mill. New hands took the place of the men locked out. Most of the men discharged by the mill manager were idle for some time after leaving, and nearly $400 was paid by the Knights of Labor to assist them.

Ganonoque collector: A strike occurred among the hame makers, owing to the alleged inefficient attendance of the boiler. Settled through the agency of the Knights of Labor. About seventy persons were out of employment for three weeks.

Hamilton collector: Four strikes occurred during the year. The custom tailors in April demanded a readjustment of their bill of prices, and after a strike of eight days, by which about 40 men and 30 women were affected, involving a loss of wages of about $800, succeeded in settling the matter by a compromise. About the same time the 'longshoremen, employed principally in handling coal, demanded an advance of wages over last year's rates, and succeeded in obtaining the advance from three firms. One firm only stood out, and succeeded in procuring non-union men all season. In May the carpenters demanded an advance of wages and a change in their trade regulations. After being out two days they succeeded in carrying their demands, and worked harmoniously throughout the season. In the latter part of May the iron-moulders made a request for a restoration of the ten per cent. reduction made on them by their employers. After a severe struggle of eight weeks, in which all moulders employed at stove-plate work and many engaged in other departments of the industry were idle, an agreement was arrived at between both parties, granting a 5 per cent. advance on the 1st of July, and another advance of 5 per cent. to take effect on April 1st, 1888, for piece-workers, and a like advance to day hands. So many workers were involved that it is impossible to learn the loss of wages, etc. In all the cases except the 'longshoremen the differences were adjusted by conciliation and mutual concessions, legal arbitration not being resorted to, but committees appointed by each side had full power to act.

Kingston collector: The moulders and laborers engaged in the Canadian engine and locomotive works had a dispute about wages and struck. The laborers returned at old rates, and the moulders were given an advance. Four laborers and twenty-seven moulders were concerned. The moulders lost about $650 and the laborers about $50. During the year there was a difficulty about wages at Chown & Cunningham's. A readjustment of the wages of moulders and fitters was effected through conferences of the employers and men. The strike lasted ten days and some fifty men were involved. The loss in earnings is estimated at about $800. A strike also occurred among workers at the Montreal Transportation Co.'s ship yard, but only a couple of days was lost by the half dozen men concerned. The 'longshoremen employed by James Swift & Co. also struck. They were engaged in unloading coal vessels with the aid of a steam hoist, and the employer asked for time in which to determine the wages he could pay under the existing condition of things. The men feared he would get the better of them, and ceased work without due consideration. Their action was not regular, and the Knights of Labor could not do more than appoint a committee of enquiry. No reconciliation was effected, and the men had to seek work elsewhere. A sub-foreman at the knitting mill used impertinent language to the women, and a large number of them notified the manager that if the offender were not removed they would leave the mill. He was dismissed. About sixty persons were interested, but no practical loss of time or money occurred.

London collector: Carpenters, painters, bricklayers and bricklayers' laborers engaged in strikes during the year. The bricklayers struck for higher pay and succeeded. Their laborers also struck for higher wages, but were only partially successful; those who were regarded as worth it got the increase, while the majority remained as before. The painters asked for nine hours a day at the same pay as when working ten, but were only partly successful, good mechanics being granted the full change demanded, while the inferior were refused the full terms, although all now work but nine hours per day. The carpenters also struck for nine hours per day at same pay as for ten hours previously, and were partly successful as in the previous case described; 229 men were concerned in the strike, and the loss in wages is computed at $10,650.

Oshawa collector: Two strikes occurred at Heap's factory in which 80 persons were concerned, involving a loss to the wage-earners of about $2,250.

St. Catharines' collector: The printers went on strike over "boiler-plate" or stereotyped matter: the builders' laborers had a dispute regarding wages; the stone cutters, masons and laborers over semi-monthly pay, and seamen over wages and trade regulations. The builders' laborers, masons and stone-cutters had their grievances settled through conciliation, but the others remain unsettled. About 300 men were engaged in the strikes, and the loss in wages was about $1,000.

Toronto collector: The carpenters went on strike in the early part of June. They sought the establishment of a nine-hour working day, and 25c. per hour as a minimum rate of wages. This strike affected some 500 men following that trade. Despite an effort extending over ten weeks they failed, and returned to work under the former conditions. The loss in wages during this strike, in so far as it affected the carpenters, aggregated $48,000. What the loss was on the part of the employers I am not able to approximate with any degree of certainty, but it must have been many times greater than that entailed on the men. This strike was responsible also for the strike of the lathers, plasterers and plasterers' laborers—in all some 600 men—who came out in the first instance in support of the carpenters. After being out some two weeks the plasterers determined that before resuming work they would have an increase of 1½c. per hour. After a seven weeks' fight the plasterers' demands were conceded. The loss of wages to plasterers in this fight was about $16,000 while the aggregate loss in the wages of plasterers' laborers and lathers sums up in the neighborhood of $20,000. The arrangement with the employers on the part of the plasterers holds until June 12, 1889.

7. Organized Labor.—Of the twenty towns and cities reporting, Almonte is the only place where there is no form of organized labor. In some places interest in the various orders appears to be flagging, or as our Brockville collector puts it, they exist "in a very modest sort of a way;" but in several of the cities and towns, organized labor, so far from being in a state of "innocuous desuetude," are in a vigorous and growing condition. Societies of labor for women exclusively are to be found only in Hamilton, Kingston and Toronto, the female assembly of Belleville being reported as disorganized; but in St. Catharines the tailors' union is composed of both sexes; in Chatham there are ten females in the Knights of Labor, and the Gananoque collector reports female labor "organized to a small extent." It is claimed by several collectors that organized labor has the effect of keeping the price of labor steady and firm, and has proven of general advantage to the working classes. Where strikes have been indulged in, the strikers in the majority of cases were members of some labor organization; yet there are instances where the Knights of Labor were called in to arbitrate between employers and striking employés. Very little can be gleaned as to the extent of the sums spent for benevolent purposes by the various associations of workingmen, although it is stated in a general way that due attention is paid to the needs of those deserving assistance at the hands of labor organizations. In Toronto there is an actual membership of about 8,500 in the various trades and labor societies; in Hamilton there are about 3,000, while St. Catharines comes third, there being some 1,023 persons enrolled in one or other of the orders of labor.

Belleville collector: There is an assembly of the K. of L. here with a membership of about 200; a cigar makers' assembly, with a membership of about 20, and the carpenters' union of about 75 members. The female assembly has become disorganized. Organized labor has increased wages slightly.

Brockville collector: We have now practically no labor organization in Brockville. A short time ago a large assembly of the K. of L. existed here, but it seems to have succumbed, presumably as a result of want of unity among its members. The moulders' union still exists, but in a very modest sort of a way, and is scarcely heard of. There is no other organization.

Carleton Place collector: There is one assembly of the K. of L., with a membership of about 40, composed of fitters, machinists, blacksmiths, carpenters and laborers. About $100 was paid for relief to members being on sick benefit.

Chatham collector: There are two branches of the K. of L. here with a total membership of about 400, made up of representatives of nearly every occupation. There are about ten females among the members. The general membership has not increased any. Good men in the order say it has a tendency to keep wages on a firm basis.

Cornwall collector: There is but one organization here, an assembly of the K. of L. There are at the present time about 180 members in good standing. While all trades are represented, the assembly is composed chiefly of cotton workers. Female labor is not yet organized, but is organizing. My opinion is that so far organized labor has had no effect upon wages here. The K. of L. here during last summer gave support to some eighteen men who claimed to be locked-out members of the order and employés of the Stormont mills. The assembly paid nearly $400 towards supporting the men above mentioned, and an additional sum of about $200 was spent during the year for benevolent purposes.

Galt collector: There are two labor organizations here—the masons and bricklayers' union and the K. of L.

Gananoque collector: There are four assemblies of K. of L., but no unions representing distinct trades. The assemblies number about 500 members, but the number has decreased somewhat during the year. Female labor is organized to a small extent. No positive effect upon wages is noticeable from organization. The lock-out in February was supported by the K. of L. to the extent of $150, and about $50 has been expended for benevolent purposes.

Guelph collector: We have here Knights of Labor, the moulders' union, the laborers' union, and one or two other associations; but being very secret organizations, it is difficult or impossible to get or give satisfactory reports. There are two assemblies of the K. of L., comprised of men from every trade and occupation in the city, and they are a strong body, able in every respect, mentally and numerically, to give a good account of themselves. Some of the members of the K. of L. hold prominent positions. The moulders' union is a very strong body, having complete control of their business, and so far as I can learn they have increased during the year. The laborers' union was an outcome of the last year. Organized labor here has been the means of preventing any cut in wages, and also of preventing strikes.

Hamilton collector: Labor is fairly well organized, there being some 28 organizations exclusive of railroad organizations, comprising 16 trades unions, 7 assemblies of the K. of L., and 5 mixed assemblies of the K. of L., with a total membership of about 3,000. Of these societies 12 are connected with international unions, 2 with international and European unions, 4 are local or national, and the K. of L. extend all over the world. There is one organization composed of females exclusively, and three of both males and females. The membership of the K. of L. has decreased slightly. Organization is considered as beneficial, having generally advanced wages. Only a few organizations report the amount expended for benevolent purposes, some refusing the information and others construing it as a violation of their rules to render such a statement. But benevolent and sick funds are generally attached to all such organizations.

Kingston collector: The greatest organization in Kingston, and one embracing nearly all the trades, is that of the Knights of Labor. The first assembly was formed over a year ago; about May a second assembly was organized; in July a third; in October a fourth, and in February of 1888 a fifth. The parent assembly is called "Limestone," and is termed a mixed assembly, because it includes all such callings as have not enough representatives to warrant them in forming an assembly on their own account. "Frontenac" assembly is composed exclusively of iron-workers, iron-workers' assistants and laborers employed in and around the founderies and shops. "Mayflower" assembly is composed of women—employés of the mills, tailoresses and others. The "Longshoremen's" assembly is, as its name implies, made up of men who are employed along our harbor front, and also such laborers as are not identified with those in the other assemblies. The Building Trades assembly is composed of carpenters, masons, stone-cutters, painters, bricklayers and others. Outside of the K. of L. there are but two labor organizations, the Moulders' union and the Amalgamated Association of Engineers. A district assembly may be formed very soon. The five local assemblies have expressed a desire for it, and the money has been sent to Philadelphia. It will, however, simply be a supervising body, and be composed in most part, if not entirely, of the officers of the other assemblies. The K. of L. number about 1,000 and are constantly gaining in numbers and influence. The Moulders' union number about 50, and like the Amalgamated Society of Engineers, which numbers 15, its numerical strength is fixed. Organization has certainly benefited the men in regard to wages and other interests. Coming together at regular intervals they are able to talk over their affairs and be mutually helpful. Organization has secured advances for some men who would never have got them if they depended upon their own individual efforts and resources. Strikes are not courted. The couple that occurred recently resulted in loss to employers and employés. These strikes, however, demonstrated to what extent the men had become identified with the different orders, and this gave additional weight to the claims of the strikers. The K. of L. made only one special assessment in the interest of those engaged in strikes, and as it was made voluntarily it amounted to only $60. Two other light assessments were in the interest of members of the order deserving of aid. During the past year about $75 was granted by the K. of L. towards various strikes in the United States. All the assemblies, especially the older ones, have spent considerable through their almoners, in the assisting of the sick and distressed, but the amount is not given to the public or even to the assemblies. Various co-operative schemes are under consideration.

London collector: There are ten labor organizations here, as follows: Bricklayers 45, amalgamated carpenters 34, brotherhood of carpenters 40, painters 35, laborers 75, amalgamated engineers 30, moulders 65, two assemblies of K. of L. 115, typographical union, 40. Female labor is not now organized. The two "mixed" assemblies have died. Organization has increased wages. Each organization will average about $60 for benevolent purposes.

Oshawa collector: Labor is very fairly organized in this town. There are four organizations, together with a central head—a trades and labor council. The iron moulders' union has existed here for the past twenty-three years, and last December showed a membership of 113, including every moulder in town. The K. of L. is a mixed assembly of all trades and callings except moulders, and number about 80 members. L. A. 4279 K. of L. is a moulders' assembly, of 44 members (all members of the union). There is also a steel workers assembly, with about 50 members, all of whom work in the Cedar Dale works. The trades council is composed of four members from each of the above mentioned organizations. There has been a slight decrease in membership of the various associations. Female labor is yet unorganized, although attempts have been made more than once to organize. The only trade thoroughly organized is the moulders, where it is strictly "no card no work," and the effect of this strictness has been to protect the members and secure to them as fair a share of the proceeds as outside pressure (particularly from cities of the United States) will permit. In Lindsay, Ayr and other places where there are not sufficient moulders to organize the day's pay is $1.50, while here $2.25 per day is given (on a par with Hamilton but 15 cents below the Toronto rate.) Organized labor in its endeavors to protect its members has often been compelled to have recourse to strikes (where arbitration has been refused by employers), for neither the iron moulders' union nor the K. of L. are allowed to enter upon a strike until other peaceable efforts fail. The iron moulders union has expended annually in the matter of death, disability, sickness and charity about $142.

Ottawa collector: There are two assemblies of K. of L., a printer's union, cabmen's union, workingmen's association, and coopers' and carpenters' unions.

Peterborough collector: Labor is not as well organized in town as it should be. There are five organizations: K. of L., with a membership of 35 in good standing; moulders' union, with 28 members; typographical union, 18 members, and a brotherhood of carpenters and joiners organized last week with 30 charter members; also a shoemakers' union. The K. of L. have decreased in numbers during the year. Organization has had no perceptible effect on wages.

St. Catharines' collector: Fidelity assembly is composed of millers, turners, saw makers, edge-tool workers, marble workers, merchants, contractors, street car conductors and drivers, blacksmiths, machinists, engineers, dock-laborers, teamsters, shoemakers, jewellers, stonecutters, quarrymen, unskilled laborers, etc., 465 members; Advance assembly—tailors and tailoresses, 42; Perseverance assembly—axemakers, 50; Ontario assembly—wheelworkers and spokemakers, 45: Barry assembly—tinsmiths, plumbers and gasfitters, 40; Welland Canal assembly—seamen, 125; clerks' assembly, 20; brotherhood of carpenters, 68; masons and bricklayers' union, 35; builders' laborers union, 30: brotherhood of painters, 30; ship carpenters and caulkers' association, 30; barbers' association, 16; cigar makers' union, 15; typographical union, 12. Total organizations—15; total membership—1,023. Organization has had a decided influence in increasing wages. Some $1,015 was expended on strikes and lock-outs, or about $1 per capita. About 40 per cent. of the receipts is set aside for benevolent purposes.

Stratford collector: The only organized labor societies are the Knights of Labor, the masons, and the laborers' unions. All trades are represented in the K. of L., and the total membership is between 400 and 500. The effect of union on wages has been to keep rates from being lowered, and in the case of masons and laborers to slightly raise wages.

Toronto collector: International unions—Typographical, bricklayers, cigar-makers, amalgamated carpenters and joiners, iron-moulders, stonecutters, American brotherhood of carpenters, painters. National union—Builders' laborers. Local union—Stonemasons. The combined membership of these unions amounts to 3,500 men. Besides the unions referred to—Toronto's workers are largely represented in the order of the K. of L., having a district assembly as well as fifty local assemblies of that body. These local assemblies represent respectively: leather-workers, varnishers and polishers, upholsterers, trunk-makers, bakers, railway employés, wood-workers, watch-case makers, barbers, steamfitters, jewelers, excavators, plumbers, teamsters, iron-workers, book-binders, tin-workers, wood-working machinists, shoemakers, carpenters, carters, 'longshoremen, boiler-makers, brick-makers, carriage-workers, sugar refiners, electro-plate workers, brass-finishers, journalists, tailors, machinists, brewer's employés, musicians and rattan-workers. Besides the trade locals just enumerated, there are twelve or fourteen mixed assemblies, composed of people whose callings are in most cases organized into distinctive bodies. There is one local assembly of K. of L. composed exclusively of females, the membership of which is increasing weekly. The aggregate membership of the order in Toronto is about 5,000. The general effect of the organization of labor has been the retention if not the increase of wages.

8. Reading Rooms and Libraries.—None of the towns and cities reporting are without reading-rooms or libraries of a public character, but only in Belleville, Cornwall and Hamilton has there been anything done by labor organizations in the way of providing mental pabulum for members. The G. T. R. railway men support and conduct reading rooms, etc., at Belleville and Stratford, which are in a flourishing condition, and a similar establishment is in operation at Kingston, controlled by the employés of the Kingston and Pembroke railway. Mechanics' institutes have been established in nearly every town and city in the province, open, of course, to citizens of all classes upon payment of a small annual fee, while in a few instances they are free, as in Guelph, St. Catharines and Toronto. The Y. M. C. A. has reading rooms, etc., in Gananoque, Hamilton, Kingston, London, Peterborough and Toronto, while the Roman Catholics have libraries or reading rooms in Almonte, Kingston, Peterborough and St. Catharines. Both political parties have reading rooms in Belleville, and one or two other places report reading rooms connected with political clubs. Special mention is made by our Peterborough collector of the benefits to the working classes of a business college, where evening classes are taught, and a few other collectors report that the reading rooms and libraries are well patronized by the working classes; but some collectors deprecate the lack of interest taken in mental culture by the laboring classes while so many advantages are at hand. The following are the references to the reading rooms, etc., established exclusively for railway employés and other workingmen:

Belleville collector: Two have been established for years—one in the Mechanics' Institute and the other is the G. T. R. reading room, maintained by the employés of the road; each of the political parties has a reading room since last Dominion election, and last fall the K. of L. established a library and reading room with the assistance of friends of organized labor.

Cornwall collector: The K. of L. have opened a reading room and library during the year, which is maintained by the members of the local assembly. It is usually open each night of the week to members only. It is very poorly patronized. Such an institution is badly needed here, as the youth (and middle aged for that matter) have not had much choice as to where they will spend their evenings except in the hotels and billiard halls and even worse places.

Hamilton collector: The Y. M. C. A., D. A. 61 K. of L., and the Y. M. L. C. have each a reading room, but none of them are greatly patronized by the working classes.

Kingston collector: There are three reading rooms and four libraries here. The Kingston and Pembroke Railway reading room and library was founded in 1881, and is maintained by the railway men and members of the benefit society, who contribute 50c. per annum towards the general fund. The greater part of those attending the Y. M. C. A. reading room are young men of the working classes. The papers and journals of the Catholic Literary Society are in good demand by workingmen.

Stratford collector: The Grand Trunk library and reading room, the only one in connection with any industry in this city (reference to which I also made in last year's report), held its annual meeting recently. The financial statement shows a cash balance on hand of $140.63, which will be invested in new books and periodicals as required from time to time. The officers are a president, vice-president, secretary and treasurer, and a committee of seven, as well as two auditors, all workmen in the employ of the company. There are 1,600 volumes in the library, and on the tables of the reading room may be found some of the best reviews and periodicals of the day and the leading dailies. The rooms are models of neatness and order. There are 140 members.

General Labor Notes.—Collectors were invited to report on any special subject of interest to the working classes, and also to suggest topics considered worthy of future enquiry. From the responses to this invitation the following selections are made:

Chatham collector: The United Business Mens' Association I reported last year is still in existence and in about the same standing—about 40 members. Its councils are secret, and it is used as a sort of protective association for the benefit of its members only. It has no political significance, but is very adverse to the Knights of Labor. Merchants tell me that accounts were never harder to collect than now. In mills and factories here the men who applied in vain for work can be numbered by hundreds

Cornwall collector: If there ever was a time and place where a resident factory inspector was a necessity, that time is now and that place is Cornwall.

Galt collector: Work has been plenty here for the last four or five years, and wages have been pretty much the same all the time, but this year work is getting slack, and quite a number of men are leaving town and going to the States, and some of the shops are working shorter hours.

Gananoque collector: With reference to dangerous machinery, I would specify the machine known as the "buzz planer."

Guelph collector: The working classes are strongly in favor of an Act to prohibit the giving of bonuses to or exempting from taxation manufacturing or other industries by municipal councils. They also condemn any assistance to immigrants, considering the present state of the labor market, and object to the action taken by the Government in assisting and countenancing steamship companies who spread throughout the length and breadth of Europe false and exaggerated reports concerning the state of trade, rates of wages, cost of food, etc. The workers in this city would like to know when it will be their turn to receive a visit from the Factories inspectors. There are boilers here needing inspection, fire escapes are required, and there are many green hands at machinery.

Kingston collector: The manner in which the Factories' Act is being enforced is found fault with by many. The law calls for various things in connection with the mills—the cotton mill especially—and yet these things are not supplied, and no effort is being made apparently to supply them. I think the workingmen would like full and authentic information on the following points: 1. Is the public school education carried far enough in the interest of those who purpose becoming mechanics? Is there a demand for manual education, and is there an attempt being made to meet that demand? 2. Is there not a decadence in the apprentice system, and are the trades not suffering in consequence. 3. Is Sunday labor performed to any extent in Canada? Is it not done sometimes when it could be avoided?

London collector: Instead of spending our hard earned money assisting paupers to come to Canada, we should use it at home to induce our young men to go on land instead of lounging about towns or cities or going to the United States. Canada's immigration policy has been basely wrong. She has been fetching from the old world a second and third rate class, while the very best of our young and middle aged Canadians, both male and female, are going to the States. Notwithstanding the immigration we have had, the population has not materially increased during the past six years. Vigorous steps ought to be taken to stop the so-called philanthropic system of making Canada a dumping ground for England's stray waifs and foundlings. So far as I have been able to ascertain, they are gathered chiefly from the gutters and alleys of old country cities, and are of the most objectionable class. We have enough to do to keep our children from evil association, but how much more it will be when they come in contact with these outcasts from Great Britain!

Oshawa collector: In reference to the small margin of wages earned and expended, it is nothing but right to mention that a large and increasing proportion of mechanics are saving by means of life insurance and endowment policies, which are not shown in the statistics.

Peterborough collector: There is one practice the working people of this town are down on, and that is the scattering of those children from the old country broadcast through the country under the auspices of the Barnado Home, while the children of this country cannot get a thing to do. These old country waifs are filling up the places with farmers and every place where young help is wanted.

THE LABOR QUESTION IN CONNECTICUT.

The first and second annual reports of the Bureau of Labor Statistics of the State of Connecticut, by Professor Hadley, are documents of great value. The report for 1885 covers only the five months ending with the 30th of November in that year. While the statistics are necessarily somewhat meagre at so early a stage in the work of the Bureau, the full discussion of the work and methods of such bureaus, and of various questions such as those relating to wages and profits, cheap labor, manner of payment, health and morals, etc., is of special interest to the industrial classes everywhere.

Collecting Statistics.—Statistics, to be of any value as a basis of opinion or of legislation, must be accurate and reliable. The difficulties in the way of obtaining such statistics are very much greater than is generally supposed. Some of these are well brought out by Professor Hadley. Statistics of wages, for instance, are generally too high. Answers from employers are apt to give an unduly favorable impression. "The employer who is paying high wages likes to have it known. The employer who is paying low wages likes to conceal it." All the effects of misrepresentation may be produced without any direct violation of truthfulness, *e.g.*, in selecting one week rather than another the employer will be pretty sure to choose one of the best rather than one of the worst.

The same result of over-estimation follows if the reports of the workmen themselves are taken. The men who answer letters and circulars asking information are not average workers. They are the best men, more intelligent and so more successful than the average. "If questions are asked of five hundred men indiscriminately, and two hundred actually give available answers, those two hundred will not be average representatives of the whole five hundred. They will, on the average, have more brains than the other three hundred. The very fact that they answer, while the others do not, shows this."

Again, it is almost impossible to take sufficient account of time lost. The employer is not likely to report with completeness the time lost by closing down parts of his concern, or repairing individual bits of machinery; and very few employés keep anything like an accurate account of time lost by irregularity. "The men who do keep an account are, as a rule, those who lose the least time."

The differences in figures resulting from these various causes are illustrated by certain returns of the Massachusetts Bureau of Labor Statistics. In 1875 figures of wages were obtained independently from employers and from employés. The returns of employers gave the average of men's wages throughout the State as $580; those of the employés gave only $482. The employers' returns placed the average annual wages of women at $343; the employés put them at $220. A comparison of certain returns of the Massachusetts Bureau with those of the United States census shows a difference of nearly twenty per cent. on the industries compared, the census returns being the lower and the more accurate.

Methods of Investigation—The value of accurate statistics as a guide to legislation is now universally conceded. It is one of the chief uses of a labor bureau to supply such information as may serve this purpose. In order to constitute a case for legislative interference, Professor Hadley argues, three points must be made out: (1) The grievance must be important. (2) It must be one which cannot be remedied by the courts without new legislation. (3) It must be one which can be remedied by such legislation. "It is the business of the Bureau to find out where this state of things really exists." Statistics help to determine the first point. How are such statistics to be obtained? There are four possible ways: (1) By personal investigation. (2) By voluntary replies to circulars. (3) By compulsory replies to circulars. (4) By special agents. The first method is obviously the best, and in certain cases the only proper one. But it is

not generally available. The number of manufacturing concerns is so large that it would be impossible, in a populous state, for any official to visit more than a small portion of them in any given year. Experience shows that personal investigation as a rule, or as a main reliance, cannot cover a sufficiently wide range of ground to make the work of a bureau at all complete. "If it deals only with a few concerns it might be useful as a means of agitation, but not as a means of securing general results which could furnish a proper basis for legislative action."

The plan of voluntary replies to circulars has been tried in a great many states, but has almost always failed. "The blank or circular system is open to the objection that it compels the Bureau to propound questions to a witness with whom it has no personal relations, and of whom, in the great majority of cases, it has no personal knowledge. If the witness be a willing one he often mistakes the meaning of some of the questions propounded, and his misapprehension leads to answers which are either totally at variance with or repugnant to the real nature of the question. If the witness from any cause be an unwilling one, he answers the least important questions only." In some cases, as Professor Hadley mentions in another connection, the asking for information is resented as an impertinence, and the circular is either disregarded or the distributor is told, without much ceremony, that he is prying into other people's affairs.

The plan of compulsory replies to circulars has been systematically carried out in Pennsylvania, and to a less extent in certain other states. "More answers are obtained under this method than under the voluntary circular plan, but the results are not such as to make it a safe one to follow." For many years in Pennsylvania the returns, in spite of the law, were so imperfect as to be of little value. Then, again, the right to enforce replies can be insisted upon, if at all, only in the case of corporations. Individuals cannot be compelled to give, even in response to a government circular, the details of their business operations.

Inquiry by special agent is the plan endorsed by Commissioner Hadley as the only reliable means of procuring general statistics. This is the plan by which the Massachusetts Bureau has attained its success. It has been recently applied by some other states, and is, of course, the mode used in collecting national census returns. In the case of the national census the answers are compulsory, but in most of the individual states they are voluntary. In either case the agent can get a great deal of information which it would be impossible to get by mail. Whether any state or province is willing to incur the expense necessarily involved in this method is, of course, an open question.

Profits and Profit Sharing.—In any investigation of the relations between labor and capital Professor Hadley says there are three questions to be considered: "First, how far do the evils complained of really prevail? Second, how far can they be helped? Third, can legislation do anything to help them? If they exist widely it constitutes a public evil. If they can be helped it constitutes a grievance. If they can be helped by legislation it constitutes a political problem."

That wages are not high enough in proportion to expenses, is an evil. The question of grievance depends upon whether they are high enough in proportion to profits. That is the essence of the quarrel between labor and capital. How can these be brought to understand one another? The large manufacturers are no doubt, as a rule, desirous of a good understanding with their workmen. "They are blind to the fact that in a great many instances no such understanding is possible as long as they keep entirely secret the question how much money they are making." Here is a most important point too often overlooked. The manufacturers feel that secrecy concerning expenses and profits is a great advantage to them in dealing with their rivals. They do not see what a danger it may involve in dealing with their own workmen. They come often to set such an importance upon business secrets that they resort to concealments which can hardly do them any possible good. Desiring a good understanding with their workmen, they refuse the very means which would make this understanding possible. An excellent feature of Commissioner Hadley's reports is the introduction of brief but pointed quotations from

answers received from all classes of workers. Many of these touch keenly on this point. "Investigate process of manufacture; see what is labor's share." This is the constant refrain. Amongst workingmen there is an unmistakable demand for this kind of information, but, unfortunately, no very clear idea of how it is to be obtained. In the case of certain corporations, especially railroad corporations, a good deal of publicity in this respect has been obtained, but these are the exceptions. It is manifestly impossible to enforce it in the majority of instances by legislation. It must be had, if had at all, as the result of negotiation, or pressure, on the part of the workers themselves.

But such information is manifestly a condition precedent of any satisfactory profit-sharing or coöperative arrangement. What is commonly called coöperation is such only in name. "A well-managed coöperative store is a good thing. It attempts to do away with the profits of middlemen or speculators, for the profit of the consumer. It is coöperation between capital and consumers. But the great thing wanted is, coöperation between capital and producers." There are several ways in which this can be more or less perfectly secured. When the employé is sure that increase in the profits of the business means promotion and increase of pay to him, the law of coöperation is at work. He has a personal inducement to strive to increase those profits by industry and economy.

The same effect may be to a certain extent secured by the manner in which wages are paid. Payment by piece-work is a kind of coöperation. It gives each individual an interest in making his product as large as possible. But here there is the constant danger of sacrifice of quality. "The difficulty with piece-work," said a foreman in a leading factory, "is that when it is once introduced, the workmen always proceed to cut their own heads off." In the desire of each to make his own wages as large as possible, they increase the quantity of goods without regard to quality, and enable or force the company to reduce prices, so that wages are soon forced back to the old level or below it.

A third form of coöperation is involved in the system of sub-contractors without capital. This is an outgrowth of the piece-work system. The manufacturer says to the foreman of a room: "I will give you a certain gross sum for a certain amount of work to be performed in your room. Make what terms you can with the workmen." Under this system the owner furnishes the capital and pays the workman. The great advantage is the stimulus it gives to the foreman to become a contractor. "It enables a man without capital to grow rich." Its disadvantage is that it tempts him to economize by crowding down wages. This is not, Professor Hadley thinks, a necessary consequence of the system, but it is certainly a natural and not infrequent one. The system is coöperation, only within very narrow limits. It holds out no inducement to the vast majority of workmen who are not and cannot become sub-contractors.

Under a fourth plan of coöperation employés are encouraged to become holders of stock in the company for which they work, with a view to giving them an interest in increasing its profits. Well-managed companies do this in a great many instances. Its great weakness is that the amount of stock held by employés is not large enough to give them any influence in the management of the company.

"Any thorough system of coöperation must give the workman, as a workman, some share in the profits, in addition to his wages." Many are looking to some such system as this for a solution of the disputes between labor and capital. At first thought, and at second thought too, it would seem as if this should be the natural and equitable basis for a mutually satisfactory arrangement, provided only that labor and capital are each willing that the other should have a fair share of the profits. But the practical difficulties are found to be many. Comparatively little has as yet been accomplished on this continent, though a few hopeful experiments are being tried in the United States. The conditions under which the plan is being tried in England and France, are, Professor Hadley seems to think, of such a kind that we can learn little from the results. The chief obstacle—apart, perhaps, from one to which Professor Hadley makes no reference, viz., the unwillingness of the average capitalist or company to divide what they regard as their legitimate profits with the workmen—is the publicity involved. "Almost any possible system involves an inspection of the books of the concern by a committee of workmen." Why this should be thought so inadmissible is not clear. Professor Hadley thinks that the objection might be partly obviated by allowing the employés to share in the profits which

are actually divided, or reinvested. When a dividend is declared, the amount actually divided is no longer a secret. "The net increase in investment—that is to say, the difference between the increased value of the property and the increase of indebtedness, could also be made public." The Commissioner adds: "A dividend among the workmen, on the basis of these two elements, ought not to involve the betrayal of any secrets. If, for business reasons, a company choses to conceal the existence of a cash reserve which it has earned, no harm is done to the workman. Either this reserve appears in the dividends of subsequent years, in which case it inures to his benefit, so long as he remains in their employ, or it is lost in subsequent transactions, in which case it prevents his having to bear the burden of the loss." It will be difficult, we fancy, to get the workman to concur in this view. If he is to be a sharer in the fortunes of the concern, he must be kept informed as to its position. He will not consent to be but half trusted. The tendency of having a secret reserve fund will be to encourage suspicion and exaggeration.

The unknown is sure to be thought of as the magnificent. If the employé is really to become a partner in the concern, a *bona fide* sharer in its prosperity and adversity, there must be no concealments.

Labor Organization.—The prime object of labor organization is, according to Professor Hadley's view, to try to enable the different interests to meet one another on an equal footing. The individual workman does not meet his employer on equal terms. When the law assumes that he does so, it makes a mistake. If the employer does not see that it is to his interest to consult the interest of his employe, or when he does not chose to do so, the individual employé has no remedy. It is for this reason, more than any other, that he resorts to combination.

The popular idea that trades unions exist only for the sake of organizing strikes is a great mistake. Many of the unions are simply a kind of mutual benefit societies. Others aim at the improvement of the workmen in their trades. Strikes, even when made most prominent, are but an incidental result of these organizations. It is somewhat difficult, however, to reconcile these statements with the view above quoted—that combinations are resorted to mainly to put the individual employé more nearly on a footing of equality with his employer. In order to do this it is necessary that all the employés in any given establishment, or line of establishments, should unite for the vindication of what they may regard as the right of individual members.

Trades unions are seldom judged on their merits by the public, because of their tendency to promote agitation, and because of the disfavor with which they have generally been regarded by the law.

Professor Hadley takes strong ground in favor of the granting of the right of the Knights of Labor, trades unions and similar associations to incorporation. Such recognition of the associations organized by the working masses to improve their condition and protect their rights ought to be granted, "if for no higher reason, simply because the refusal to grant it creates invidious distinctions, and does no good." The high authority of Mr. Jevons is quoted. Mr. Jevons says that the refusal to allow such incorporation in England some years ago amounted to practical refusal of justice. "The state of the law was such as to promote and encourage fraud and injustice. There was no sense in trying to discourage unions by indirect means, which did not prevent their formation, but which obliged the members either to suffer from fraud, or else to resort to violent means of redress." Professor Hadley thinks it doubtful, however, whether a change in the law would have any great practical effect in most of the states. It did not have the effect expected in England. Many organizations seem to have been deterred from taking advantage of the law by the necessity of registering their rules. But even that fact evidently does not justify the law in refusing them the opportunity to incorporate, if they will. The best thing is to give them a recognized character. The history of English trades unions shows the great possibilities of good in them. In America they have had less chance and time for healthy growth.

A third reason for the disfavor with which unions are apt to be regarded by the public is that they come before it chiefly in connection with large strikes. But "to

judge of trades unions solely by their action in strikes is like judging of a man's character by the way he behaves when he is sick." A fair and thorough investigation of a strike can, however, hardly be made by a statistical Bureau. The statements of facts on the two sides conflict. The Bureau has no means of finding out which is true. It is shut up to voluntary information, and cannot even bring the parties face to face. Nor do statistics give any conclusive proof as to the relative number of successful and unsuccessful strikes. That they were successful in a great many instances, often enough to encourage frequent resort to them, is unquestionable. Still capital has always had an advantage. "Let the workmen be as well organized as you please, the reserve resources of the capitalist were usually greater, and when the contest was close he could prolong the struggle further before reaching the point of exhaustion."

Boycotting.—Within a few years this new element, the power of boycotting, has been introduced into the problem. It is this power which gave the greatest importance to the Knights of Labor, though that organization had come into prominence long before boycotting was thought of, and was not formed either for the purpose of boycotting or of promoting strikes.

The Knights of Labor, by reason of their mixed character, represent labor as a whole, and not the members of any single class. Thus a boycott by this body, while it may not directly involve so many persons in any one locality as that of some other organization, involves them without distinction of class. Uniting consumers in a common action, the boycott is enabled to assail the capitalist at his weakest point. It is a dangerous weapon, but it has this advantage over others, that it reverses the old relations in an industrial pursuit, and gives labor command of the situation. If carried out to its fullest extent it would destroy the possibility of independent work, and create an industrial tyranny worse than that of capital. But there is no danger that it can ever be carried to that extent. In fact, the power and use of the boycott have probably been limited rather than increased since Professor Hadley wrote three years ago. The tendency is to regard the boycott when directed against an individual as of the nature of a conspiracy to be prevented by legislation. But no law can forbid the members of any class or organization to pledge themselves voluntarily to abstain from the use of a certain article, as beer, for a given time. Whether the use of the boycott has in any degree produced the effect anticipated by Commissioner Hadley, of leading to an increased readiness to submit wage disputes to arbitration, may be doubted. Arbitration is still, in the great majority of cases, either refused by one party or the other, or had recourse to as only a last resort, when both parties are well nigh exhausted, rather than at the outset. It is probable, however, that the day of arbitration as a rational method of settling disputes between employers and employés will come. Possibly standing semi-official boards of arbitration may be one of the institutions of the future, especially in the case of railway and similar corporations, in regard to which a strike affects not simply the two parties interested, but the whole community.

Long Hours and Monthly Payments.—Monthly payments, long hours and child labor go hand in hand. This is the conclusion reached by Professor Hadley in his report for 1886, from analysis and comparison of the statistics gathered with regard to time and manner of payment, credit and prices, employment of women and children, and hours of labor. This is, as he observes, what might have been expected, and yet the facts, as brought out in the state of Connecticut, are worth repeating. He finds that, "First, practically none of the weekly payment mills have a normal working day of over ten hours. Second—leaving out cases of fortnightly or mixed payment—a minority of men, a majority of women, and a two-thirds majority of children are paid monthly. Third, less than one-eighth of the men, but more than one-fifth of the women, and more than one-third of the children are employed regularly over ten hours a day. Fourth, the counties and industries which show the largest proportion of weekly payment show the smallest proportions of women and children employed, and *vice versa*." The relation of

these three industrial evils to each other may, perhaps, be to some extent modified by the nature of the manufacturing operations carried on, but there is little doubt that in the main the same law of proportion will hold good in respect to other communities and other industries.

Child labor, long hours, monthly payments—either one of these three—creates a strong presumption that the society in which it obtains is on a low industrial scale. The combination of the three affords, in Commissioner Hadley's opinion, overwhelming proof of the fact. If a man sends his young children to the mills it means either that he is unable to support his family by his own exertions, or that he cares more for a slight increase of income than for the future welfare of his family. To the children it must mean want of education, and opportunity for intellectual development, and very often physical deterioration.

The inference from long hours is pretty much the same, though perhaps not equally obvious. "The good workman as a rule desires and needs the short hours far more than the bad workman." He can both do more and better work in the shorter time and use to better advantage the leisure gained. As a rule the nations who work short hours do not only better work but more of it than their competitors. "In Russia the hands work twelve hours a day; in Germany and France, eleven; in England, nine. Yet nine hours a day of English work m an more than twelve hours of Russian work." Professor Hadley does not consider in this connection the effect of reductions in the hours of labor which diminish the quantity of product without increasing the quality. That would carry the discussion into another channel. His arguments are based upon the following industrial canon, which may be considered beyond dispute: "As long as hours can be reduced without reducing the value of the product—that is to say, as long as the quantity remains the same, or as long as any loss in quantity is counterbalanced by an improvement in quality—so long will the laborer continue to rise in the industrial scale with the shortening of his hours of work."

The monthly payment system means generally a system of store credits. It means, too, either that the hands do not appreciate the benefits of the cash system, or are not far enough advanced on the road to commercial independence to avail themselves of it. The conclusion reached by Professor Hadley, after a full discussion of the question in its various aspects, is that while weekly payments are of no use to the best workman, and may be worse than useless to the worst workman, by increasing their facilities for extravagance or dissipation, to a large body who are neither exceptionally good nor exceptionally bad, they are a positive advantage. To those who stand between the two extremes indicated, the cash system affords a means of rising; the monthly payment, with its almost invariable concomitant, the credit system, becomes a means of dragging them down. He shows, too, that those who suffer most from the monthly payment and store credit system are the women and children.

Labor Legislation.—It is one thing to make clear the existence of a preponderance of evil in connection with a certain system such as that of child labor or monthly payments. It is another to show that those evils are proper subjects of legislation; that they can be and should be forbidden by statute. In discussing the latter question, in so far as the evils above indicated are concerned, Professor Hadley lays down two propositions which need to be carefully borne in mind by the workmen affected. One is that the law in such cases is useless, unless enforced, and enforced by the workmen themselves. As a matter of fact workmen often shrink from attesting the facts and putting the law in operation. There is a certain risk, often a real personal danger, in doing so. The informer and prosecutor incurs the hostility of the employers. He is afraid of being black-listed. "The terrors of the blacklist," says Professor Hadley, "though sometimes exaggerated, have quite enough foundation in fact to make a workman hesitate before braving them." But until he is ready to do so there is no power in law to help him. The best that the state can do is to give him a chance to fight for himself. If he is afraid to do that, nobody else is going to incur the risk of fighting for

him. It is obvious, however, that here is a field for the very practical and useful intervention of the labor organizations. What the individual workman could hardly venture to do at his own risk, the organization may do and ought to do for him.

The other point to be borne in mind is that the enforcement of such laws as those under consideration is a rough, as it must be an indiscriminate process. The burden will in many cases fall most severely upon the weakest, upon those whom society would most readily spare. If the able-bodied workman, quite capable of earning a support for his family, may not send his tender children for long hours to the factory, from miserable greed, the poor widow who needs every cent that they can possibly earn to help her in the struggle for bread, may not send hers, under the pressure of the direst necessity. If the millionaire capitalist is to be compelled to pay his thousands of employés their wage weekly, which is simply a matter of a little more expense for book-keeping to him, the private manufacturers in the country town or village, whose small capital may be unequal to the strain of keeping a sufficient reserve fund on hand, must not be excepted. The law must make no distinctions.

If these three great evils, long hours, child labor and monthly payments, indicate so low an industrial condition, the law should be invoked at once to put an end to them. That is the conclusion to which the hasty reasoner is apt to leap. Professor Hadley shows that the conclusion is, to say the least, premature. It is quite possible to legislate too fast in such matters. In this, as in so many other respects, legislation which is too far in advance of public opinion, is worse than useless. Until the low condition of the laborers can be raised, so that they will at least begin to realize the advantage of the change, legislation is of little use. The laborers themselves, where they are not far-seeing enough to look at the indirect effects of child labor, will try to make a profit out of the labors of their children and will be themselves the most dangerous opponents of the child labor law.

Take the case of the attempt to enforce the cash system by legislation. This may be done in either of two ways,—directly, by a law making weekly payments compulsory, or indirectly, by repealing all factorizing laws and making it no longer possible for the storekeeper to take any security on the workman's wages. This would put an end to the credit system and lead to a necessity for weekly payments. Who would be the first to suffer? Probably the small manufacturers living in the country towns distant from a bank, unable to maintain either a sufficient cash reserve or a sufficient elastic credit. "It would simply be another step in the development of modern industry which gives the large establishment a constantly increasing advantage over the smaller one." In the case of the workmen, too, while those who are able to appreciate the advantage of a cash system will be better off than before, notwithstanding the slight decrease in wages which must result from increase of the employer's expenses, a few will be actually the worse for the change which enables them to indulge in drink more frequently, many others will go on as before, seeking credit and having perhaps to pay a still higher price for it.

These are not arguments against labor legislation in the direction indicated. They are facts designed to show that the process of enforcing such legislation is not an easy but a hard one, and that the expense of it will fall upon the weak as well as upon the strong, often more heavily upon the weak than upon the strong. But, as Professor Hadley well puts it, "It is much more important for a state that her population should be able to rise to a high standard of physical and industrial vigor, than that she should have a few more mills, employing a somewhat larger population."

We know not how it may be in the factories of Connecticut which Professor Hadley has chiefly in mind, but there can be little doubt that the weekly payment system is, without the aid of legislation, coming rapidly into vogue in at least large classes of industrial establishments. There are of course many industries in which, for various reasons, such a system would be well nigh impracticable. This is the case, for instance, with railroad and other corporations in which the men employed are scattered over large districts. They cannot call at the office for their money. It has to be carried to them, and this cannot be done so often as once a week without unwarrantable expense and inconvenience. In the case, also, of those factories in which the piece-work method is largely used, or the system of sub-contracts is in vogue, it is often found impracticable

to pay by the week, because of the unfinished state of the work. In many such cases the effect of a weekly payment system is produced by allowing the men to draw money from time to time, as needed, and having monthly settlements. But with these exceptions weekly payments are undoubtedly becoming the rule.

In the latter part of the report for 1886 Commissioner Hadley has tabulated a large number of returns received from employers in regard to weekly payment, factorizing, etc. In regard to weekly payments we observe that there is much difference of opinion. Many employers hold that it is a positive injury to the workmen, tends to prevent the accumulation of property by them, as they spend as fast as they receive. The condemnation of the power and practice of factorizing, *i.e.*, taking security on the wages of employés, for supplies furnished, etc., is very general.

We have in the foregoing summarized briefly Professor Hadley's views on several of the more important matters which come under discussion in his reports. The discussion is valuable both by reason of the practical importance of the questions discussed, and the fact of their treatment by so able a man. The statistical tables deal mainly with factories more or less peculiar to Connecticut; consequently the review has been confined largely to the more general questions discussed in the reports.

PRISON LABOR IN AMERICA.

BY R. W. PHIPPS, TORONTO.

The present article is intended to give some idea of the different systems of prison labor in operation in the United States, with the advantages and disadvantages of each as regards the competition of prison with free labor, and the relative profits gained under each, both in money return to the government and opportunity of reformation afforded to the convicts.

Without going deeply into statistics it may be remarked that there are 64,349 prisoners, 58,454 males and 5,895 females. Of these 45,277 are engaged in productive labor of some kind, 15,100 in prison duties, and 3,972 sick or idle. Of the total number 14,827 are employed under the public account system, 15,670 under the contract system, 5,676 under the piece-price system, and 9,104 under the lease system.

Prison labor in America being utilized principally under these four different systems, it will simplify matters first to describe them, afterwards giving their practical advantages and disadvantages.

That most generally used is called the contract system. The contractor agrees to furnish employment to a certain number of convicts for a specified time at a certain price per day. The state furnishes in most cases power—generally steam power, and also machinery, not often tools. The work is usually carried on within the walls of the prison, and the materials used in the manufacture are supplied by the contractor. He also sends to the prison his instructors, foremen and other such individuals, thus establishing in the prison a divided authority between the contractor, whose aim is to finish his work, and the warden, whose business is to maintain general order.

Another, not so common, is denominated the piece-price system. Under this the contractor furnishes materials. The state may furnish machinery or hire it of the contractor. But the chief point of agreement is that the state takes the materials which the contractor furnishes, manufactures them into their completed form, and receives from him a stipulated price per piece. As a general thing few, in some cases none, of the contractor's men are employed as overseers in the prison, far less, at all events, than under the contract system proper. Sometimes, nevertheless, citizen instructors are sent by the

contractor. The piece-price system, however, aims to do without these, and to allow the contractor no communication with the convicts.

There is then what is called the public account system. Here the state supplies everything: machinery, power, tools and instruction. It manufactures as much as it can, and sells the product for the best price it can obtain in the market. The state here is simply a manufacturer on its own account, its only dealing with contractors being with those who sell it materials, or who, in open market and in competition with others, choose to purchase the goods the state has for sale.

Next we come to the fourth, the lease system. Here the state, for the convicts it leases, does not even need a prison. The person to whom they are leased provides lodging, care and guard for all those whose services he hires from the state. He may employ them anywhere within the state as he sees fit, so long as he conforms to the laws and the terms of his contract. The state is free from any care in the matter, save to see that the convicts are returned at the expiration of their leases or to hold the lessee responsible under certain penalties if they escape.

We will now consider the advantages and disadvantages of these four systems as they are found to work in actual practice.

1. The first mentioned, the contract system, undoubtedly offers great advantages. In institutions where it is employed in America it is found to pay sixty-five per cent. of the prison expenses. The prisoners have constant employment, as the contractor agrees for his term to furnish it. The manager or warden of the prison need not be a practical manufacturer, that trouble being taken off his hands. This of itself is a great point, for it may be possible to secure good wardens or good manufacturers, but it is found difficult to obtain those who are both. In short, constant employment, slight state risk, and good money returns are urged in favour of this plan. On the other hand, it is objected that prison labor under it is above all others more likely to compete injuriously with outside labor. Thus it was found that in cooperage in Chicago, an industry which the enormous meat-packing trade of that city renders very large, 400 or thereabouts of convicts, employed by contract in the work, had usurped nearly three-fourths of the manufacture, had in five years closed up sixteen cooper shops employing 235 men, and had reduced the wages from 22 to 43 per cent., this decline not having taken place in other cities little affected by prison labor. For this injury to the outside business no other cause can well be adduced. The outside manufacturer argues: "Here is a contractor who pays no rent, taxes nor insurance, and hires men at from twenty to sixty cents a day. How can I compete with him? It is true that the convict is not as good as the free laborer, but all the other advantages his employer obtains much more than overbalance that defect." Another argument against contract labor is so well put by a New York State committee that I give their own words: "The labor of a prison needs to be apportioned with intelligent reference to the diverse capacities of the prisoners. One prisoner may display a special aptitude for a certain kind of work; another, by reason of physical or mental incapacities, be wholly unfitted for certain industries; one prisoner, exceptionally strong and agile, may be able to perform in a few hours an amount of work which another, constitutionally weak or inert, cannot accomplish in a day. The individual capacities of the prisoners must be observed in the allotments of labor, or it will be useless to expect reformative results. For this reason the presence of a contractor with his agents and overseers is necessarily opposed to the interests of reformation; it reduces all the prisoners to one level of uniformity, without regard to their constitutional differences; it brings into the prison a power behind that of the state which unavoidably interferes to some extent with the discipline of the plan; which fixes the stint of a day's work; which prescribes the employment of each prisoner; and which drives all the industries of the prison under the sole impetus of the contractor's pecuniary interest."

2. With regard to the second, or piece-price system, it is no less obnoxious to the charge of competition with outside labor. So far as sales and the price of goods in the market are concerned, its competition in the market is the same as that under the contract system. The main advantage claimed for it—no doubt a great one—is that it is quite possible to conduct it without allowing either contractors' instructors or overseers inside the prison.

It is said concerning it that "The piece-price system excludes from the prison every foreign element; it makes all the instructors and overseers prison officers in the employment of the state; and it gives to the warden supreme control over the labor of the convicts, with unlimited power in the individual allotment and adjustment of that labor. All the intelligent methods of prison discipline which have been approved by scientific tests are readily adaptable under the piece-price plan. Every reformatory measure and influence that can be applied under the public account system can be applied and rendered equally effective under the piece-price plan, and for the simple reason that, under both systems alike, the labor of the prisoners and all their disciplinary treatment are committed to the absolute control of the prison authorities and relieved from all extraneous dictation or counteraction. For reformatory uses it has every advantage possessed by the public account system, while it has two positive superiorities: 1. It relieves the warden from the responsibility of administering a large public fund, and from the necessity of maintaining an intimate knowledge with markets, and leaves him free to his proper work of improving the efficiency of the prison *regime*. 2. It relieves the state from much outlay of capital, relieves it from being a manufacturer as well as a capitalist, and transfers the risk of manufacture from the state to the dealer."

3. We pass on to the third—the public account system. This is considered to be the most valuable for reformatory purposes, as the class of goods made, the prisoners allotted to make them, the hours of labor, the management and government of the prison are entirely free from any outside regulation whatever. It is said, too, that convicts work with better spirit for the state than for manufacturers. The labor income is not at all so productive as under the contract system in most places, meeting only 32 per cent. of the expenses. This is partly owing to the difficulty of getting wardens who are able to superintend manufacturing establishments, or efficient superintendents of manufactories who are fit to be wardens—a difficulty rendered greater by the fact that most opinions coincide in stating that such prisons should carry on many industries, so as not to compete too severely with any outside branch of labor. To carry out this idea demands many workshops, or what is called the cottage system of prisons, under, probably, a double system of management, one superintendent caring for prison rule, another for the work of manufacturing. As far as competition with outside labor is concerned, this system is apt to be more injurious than any other. Under either of the two previously described systems, the contract proper or the piece-price, the contractor, into whose hands the prison-made goods pass, is obliged to keep his prices up to a certain standard or he loses. But the officers of a prison manufacturing goods on the public account plan are not so obliged, and if goods accumulate they are sold at a low figure. It has been proposed to check this by law, but it is not thought to be very practicable, the tendency being, if the goods do not meet with ready sale at the ordinary price, to sell them nominally for it, but subject to discounts. Yet this system is thought best with a view to the reformation of the convicts, especially under proposed modifications which will be mentioned further on.

4. We now come to the fourth—the lease system. This is the most profitable to the state, its profits in the localities where used amounting to 372 per cent. on its running expenses. This is natural, for the state has little expense. If it lease to a contractor all who may be convicted for a year it receives the amount he pays, lessened only by the salary of a superintendent and probably one or two subordinate officials. It builds no prison. It buys no food. It employs no guards. It simply receives its pay—whatever amount competing contractors will give for the use of the convicts as laborers for the term. It is to be noticed that this system prevails mostly in the southern States, where the climate permits prisoners being kept in stockades and open prisons with better health and comfort than they would find within closer walls. But serious objections are urged against it. Proper classification is impossible, the hope of reformation is slight, and that great cruelty is possible and perhaps practised under it may be imagined from some suggestive passages in the reports concerning it, that "it places pecuniary interests in conflict with humanity," and "makes possible the infliction of greater punishment than the courts have imposed."

Having now stated the four systems chiefly employed in the United States, and the principal arguments for and against them, we will now proceed to consider some of the methods proposed in their stead or as modifications.

One proposal has been to do away with competition from the prisons by entirely abolishing convict labor. This has, however, met with no general favor, and would be, to most prisoners, a cruel injury. For instance, so heavy and irksome is the pressure of idleness found that in one prison alone where it was tried for a period, in that period five times as many—*i. e.*, 25 as against 5—were sent insane from the prison to the asylum as had been sent thither during any similar previous period in the history of the institution. It is evident, too, that instead of reformation, increased vice would be the result.

Another, that the prisoners be employed on public works and roads. This, while removing competition from the classes engaged in what is generally termed manufacture, would turn it against the ordinary laborer, who is, perhaps, as working hardest for least money and being most affected by bad weather, less able to bear it than any other. Public works, too, largely consist of building, and here competition would press on the mason, bricklayer, carpenter, in fact all the building trades. Macadamizing roads has been suggested, the stone breaking being done either at the prisons or in stockades along the roads. In Canada it has been found that corporations would not purchase penitentiary broken stone, as it kept the labor from their own poor. This is evidence of the occurring competition. Building of docks, breakwaters, and so forth by prison labour in England, and of prisons in the States, is said to have cost much more than when done by free labor. This, however, is not the question. The convicts must be supported, and in any work they are set at governments must bear generally a margin of loss. The general opinion seems to be that if one government controlled many convicts—such as a federal government with all those of the country at its disposal—great works might be carried out, and if not economically, yet with as good financial returns as convict labor generally affords. But what should be aimed at, it is thought, is to find some work which, though needed and valuable, yet would not have been attempted by free labor. Two benefits would here follow : convict labor would cease to compete where it is injurious, and be employed where it would be beneficial.

Another plan is to employ convicts in manufacturing goods for government use. To this it is objected that it would not employ them sufficiently, and it is pointed out that in the States, for instance, the entire expenditures of the U. S. government for furniture, clothing, mail bags, harnesses, wagons, army equipments, clothing for Indians, etc., cost only $4,000,000, while the prisons of the states made nearly $30,000,000 worth. State government work would add little more—Illinois, for one, consuming but $50,000 annually of such goods.

It has been proposed and strongly advocated to place convicts on farms. Governor Gordon, of Georgia, says : "It would at once eliminate from our penitentiary system the serious objections to the old plan of close confinement, confine the convicts thus employed to such labor as would least compete with the honest labor of the state, place the state in direct and full control of its prisoners, restore to the state the full power to enforce the exact punishment imposed by the courts, place upon the state the just responsibility for guarding the health of the convicts, and confine them to the most healthful employments, enable the state to separate them at all times according to classes, conditions, sexes and fitness for different kinds of labor, to institute methods for reformation with greater promise of success, and would make such portions of our convict system at least self-sustaining."

There are many other propositions made, but not worthy of mention. I now come to the one which appears to me, as it has to many, best calculated to serve the interests of the public to reform the convict, and to give him, when leaving the prison, the means of support by honest labor. This is hand labor under the public account system. Under this, it is urged, each man would possess, on leaving the prison, a complete trade. At present he frequently knows but how to perform some one operation by machinery—some part of a trade. The objections to the competition of convict labor are chiefly that vast machine forces are employed, the convict—a living machine—using a lifeless one to the disadvantage of the outside worker. Goods made by hand labor, it is proved by the

experience of certain Pennsylvania prisons, find a fair market at a fair price. Another most important feature in favour of this plan is that it allows a choice of wardens. To obtain a warden who is capable to direct, not merely one industry, but different industries by machinery, is difficult; it is to ask that a number of trained manufacturers shall be concentrated into one. But when hand labor alone is concerned, men of fair average ability can soon discern the progress made by the workers in each branch of industry. Under this system the point of emulation would be to produce first-class work in rapid time. Whether it be shoes, or wagons, or axes, or cloth which is produced, the aim would be to make a shoe which would wear well, a wagon which would run easily, carry a good load and last a long time, an axe of thoroughly good temper, a piece of cloth of handsome appearance and durable stuff. This would teach the convicts, in a sense, honesty. How much better this than, the work which one convict found in a U. S. penitentiary conducted on the contract plan. He was immediately employed in making shoes and filling each sole with brown paper. "Why," he might well have asked, "should not this contractor be beside me?" On the contrary, when the idea enforced is to make in the shortest time the best article, the quality being more emphasized than the time, honesty is inculcated. There is also a moral suasion in the whole plan. The convict is taught to make a good article—an honest article—one with no concealed weaknesses, no hidden flaws. He is taught virtually to say, "This I have made is fairly made; there is no deceit about it; it will wear well; it is good. It was not made to cheat the buyer."—This is honesty.

Finally, with reference to the competition of prison labor with that of the honest artisan. The convict, before entering prison, had as good a right to compete in the labor market as any other individual. He has still that right. It is necessary to the welfare of the state that he should retain it, for it is just that he contribute to the expense of the restraint which his own ill-doing has rendered necessary. It is just, too, in another way, that he aid the state, for frequently the state has, in one way or another, to support his family. But, while allowing his right still to compete in the labour market, it is evidently incorrect that the state should, by her power of capital, enable him to produce work so cheaply as to injure the honest laborer outside the prisons by its sale. Here is where the line should be drawn. Let the convict compete fairly in the labor market, but do not give him state aid to overweight and depress honest labor. Here the last mentioned plan, labor on the public account without machinery, is suggested. Make the convict a good and thorough workman. Give him a trade on leaving which will well support him; but do not, while he is in prison, by the use of machinery combined with the capital of the state and its non-necessity of making a profit, oppress the manufacturer and workman outside whose work must pay or cease.

STATISTICS OF

WAGES AND COST OF LIVING.

LABOR AND WAGES.

TABLE No. I.—Showing by occupations the average hours employed and wages earned for a full week in October, November or December, 1887, in twenty cities and towns of Ontario, based on the returns of 3,278 workpeople collected from employés.

Occupations.	Sex and age.	Hours employed.	Wages.
			$ c.
Apprentice, various	m.o.	57.05	4 05
"	m.u.	56.33	3 09
Axe factory employé :			
Bit drawer	m.o.	54.00	13 50
Grinder	"	54.00	8 59
Hammerer	"	54.00	8 05
Heater	"	54.00	10 50
Poll maker	"	55.50	9 50
Polisher	"	54.13	9 19
Temperer	"	54.00	10 50
Baker	"	64.31	9 65
Barber	"	70.74	8 63
Blacksmith	"	58.88	9 82
Blacksmith's helper	"	57.55	7 43
Boat builder	"	59.00	8 50
Boiler maker	"	58.64	10 85
Boiler maker's helper	"	60.00	7 20
Bookbindery employé :			
Binder	"	56.60	10 15
Folder	f.o.	53.00	3 09
"	f.u.	52.75	1 88
Forwarder	m.o.	55.00	7 50
Ruler	"	57.00	12 00
Sewer	f.o.	54.67	3 92
Various	"	55.00	4 00
"	m.o.	53.75	11 75
Bookkeeper	"	59.87	12 00
Boot and shoe factory employé :			
Cutter	"	51.67	7 08
Finisher	"	56.33	8 00
Laster	"	59.00	7 50
Trimmer	"	59.00	10 00
Various	"	54.33	7 80
Bottler	"	60.00	5 50
Brass finisher	"	59.00	10 00
Brewer	"	63.33	10 00
Bricklayer	"	58.36	15 75
Brick maker	"	59.80	8 35
Broom maker	"	55.67	9 83
Brush maker	"	56.20	9 04
Butcher	"	65.45	7 23
Carpenter	"	52.87	9 82
Carpet weaver	"	55.40	8 70
"	f.o.	59.33	3 33
Carriage works employé :			
Top maker	m.o.	55.00	10 00
Trimmer	"	57.19	9 52
Woodworker	"	59.82	9 12
Various	"	59.42	9 06
Carrier boy	"	59.00	2 25
Caulker	"	58.80	9 42
Cigar factory operative :			
Cigar maker	"	49.18	7 76
Stripper	"	54.00	2 25
Various	f.o.	54.75	2 81
Confectioner	"	55.00	2 25
"	m.o.	60.36	9 77
Cooper	"	58.09	8 26
Corset maker	f.o.	50.00	4 25
Cotton mill operative :			
Carder	m.o.	60.00	7 50
Dyehouse hand	"	59.67	6 53
Loom fixer	"	60.25	11 38
Spooler tender	f.o.	60.36	4 73
Cotton mill operative—*Con.*			
Spinner	m.o.	60.23	8 34
Weaver	"	60.30	7 40
"	f.o.	60.00	5 45
Various	"	59.63	5 10
"	m.o.	60.33	7 57
Dressmaker	f.o.	60.00	3 52
Editor	m.o.	48.00	14 50
Engineer (stationary)	"	65.06	9 40
Expressman	"	65.40	8 40
Fanning mill maker	"	59.00	9 67
Fireman, general	"	58.88	8 62
Foreman :			
Axe factory	"	54.00	17 50
Broom maker	"	57.00	15 00
Cotton mills	"	60.00	14 25
Knitting mills	"	59.94	18 53
Lumber mills	"	71.75	18 14
Miller	"	66.00	14 13
Paper mills	"	54.00	14 75
Planing mills	"	60.00	12 00
Plumber	"	55.00	13 74
Printer	"	56.00	14 68
Railway shop	"	59.67	11 33
Tannery	"	60.00	13 50
Woollen mills	"	60.00	13 80
Various	"	57.50	12 72
Furniture factory employé :			
Cabinet maker	"	58.28	9 20
Carver	"	54.17	12 63
Chair maker	"	54.69	7 98
Finisher	"	57.33	9 29
Machine hand	"	53.62	8 78
Upholsterer	"	58.11	10 28
Varnisher	"	56.00	9 85
Wood turner	"	52.97	9 74
Gardener	"	58.60	7 60
Gas works employé	"	68.75	9 50
Glove cutter	"	60.00	13 90
Glove maker's helper	"	60.00	4 05
Hame maker	"	60.00	9 00
Harness maker	"	56.03	8 50
Horseshoer	"	59.25	9 38
Knitting mill operative	"	60.00	6 96
"	f.o.	60.00	3 58
Laborer	m.o.	58.99	7 18
Lamplighter	"	48.00	6 75
Locksmith	"	55.00	9 50
Lumber mill employé :			
Butter	"	69.00	8 00
Culler	"	67.20	9 00
Edger	"	69.00	9 00
Filer	"	84.00	13 50
Sawyer	"	63.20	8 63
Various	"	51.50	7 60
Machine hand	"	53.83	8 08
Machinist	"	56.93	9 65
Marble cutter	"	58.42	13 09
Marble polisher	"	59.00	9 09
Marine employé :			
Captain	"	100.00	15 75
Engineer	"	86.00	14 50
Mate	"	100.00	11 40
Sailor	"	97.90	9 53
Mason (stone)	"	57.89	15 01

TABLE No. I.—LABOR AND WAGES—*Continued.*

Occupations.	Sex and age.	Hours employed.	Wages.
			$ c.
Mattress maker	m.o.	54.00	11 00
"	f.o.	45.00	3 75
Miller	m.o.	69.19	9 75
Milliner	f.o.	55.75	7 75
Millwright	m.o.	73.83	11 57
Miscellaneous	"	57 30	8 09
"	m.u.	53.82	3 12
"	f.o.	54.33	5 25
"	f.u.	55.50	2 06
Moulder	m.o.	57.89	12 19
Organ factory :			
Action maker	"	59.29	10 34
Band sawyer	"	60.00	9 00
Bellows maker	"	59.67	9 93
Tuner	"	54.00	18 50
Various	"	57.80	9 00
Packer	"	60.80	8 25
Painter	"	57.77	9 78
Paper hanger	"	60.00	12 00
Paper mill employé :			
Bag and box maker	"	54.00	4 17
" "	f.o.	54.00	4 33
Machine tender	m.o.	57.00	8 00
" "	f.o.	54.00	3 50
Various	m.o.	55.50	9 50
"	f.o.	58.00	3 80
Pattern maker	m.o.	59.00	10 20
Piano factory employé :			
Action maker	"	57.00	11 20
Case maker	"	57.00	11 00
Finisher	"	56.25	10 00
Rubber	"	57.00	10 00
Sounding board maker	"	57.00	12 75
Varnisher and polisher	"	57.50	10 44
Various	"	61.33	11 33
Pickle maker	f.o.	60.00	3 00
Plasterer	m.o.	53.00	14 58
Plumber and gas fitter	"	55.64	11 45
Polisher (metal)	"	57.00	8 43
Porter	"	72.66	7 33
Press feeder	"	54.75	5 92
"	f.o.	54.67	3 67
Pressman	m.o.	56.57	8 83
Printer	"	54.97	10 03
Quarryman	"	59.00	7 95
Railway (road) employé :			
Brakesman	"	61.08	10 20
Car cleaner	"	62.75	6 88
Conductor	"	73.33	15 06
Engineer	"	61.00	15 09
Examiner or tapper	"	79.00	9 80
Fireman	"	60.73	9 91
Switchman	"	64.67	8 79
Wiper	"	69.38	6 51
Various	"	58.57	8 70
Railway (shop) employé :			
Car builder	"	50.33	7 67
Car repairer	"	63.44	8 27
Fitter	"	59.33	9 86
Woodworker	"	54.00	9 90
Various	"	58.60	9 61
Reporter	"	61.67	9 00
Salesman	"	63.05	8 17
Saleswomen	f.o.	59.22	4 50
Sash, door and blind maker	m.o.	59.00	10 50
Saw works employé :			
Filer	m.o.	59.00	9 00
Grinder	"	56.00	12 75
Handle maker	"	58.00	10 67
Sawsmith	"	58.00	14 25
Various	"	58.00	8 50
Screw maker	"	55.50	7 50
Sewing machine maker	"	55.00	8 00
Shipper	"	54.38	7 38
Shirtmaker	f.o.	60.00	3 25
Shoemaker	m.o.	59.60	8 09
Stave cutter	"	51.00	9 50
Stove foundry employé :			
Fitter	"	59.33	11 83
Melter	"	58.90	8 25
Mounter	"	59.08	9 38
Various	"	57.60	8 25
Street Railway employé :			
Driver	"	73.33	7 17
Stableman	"	84.00	7 75
Tailor shop employé :			
Cutter	"	54.33	15 83
Tailor	"	59.28	9 65
Tailoress	f.o	55.95	4 76
Tannery employé :			
Beam hand	m.o.	59.80	8 70
Currier	"	61.29	9 14
Tanner	"	59.73	8 34
Teamster and carter	"	60.15	6 95
Telegraph operator	"	55.67	10 29
" "	f.o.	55.00	6 58
Tinsmith	m.o.	59.27	9 22
Tobacco roller	"	56.13	10 69
Tool maker	"	57.00	11 75
Traveller	"	56.57	14 35
Wagon maker	"	59.33	10 83
Watch case maker	"	59.00	10 20
Watchmaker	"	58.67	10 50
Watchman and caretaker	"	70 33	8 05
Wheelmaker	"	56.30	9 55
Woollen mill employé :			
Carder	"	59.67	12 25
Card helper	"	60.00	5 20
Dyer	"	58.50	8 19
Finisher	"	59.67	9 08
"	f.o.	57.00	3 00
Fuller	m.o.	60.00	7 95
Reeler	f.o.	59.50	2 50
Scourer	m.o.	60.00	4 80
Specker	f.o.	60.00	3 50
Spinner	m.o.	57.64	7 56
"	f.o.	60.00	2 89
" helper	m.o.	60.80	3 28
" "	m.u.	60.00	2 97
Spooler	f.o.	58.00	2 80
Warper	"	60.00	4 00
Weaver	"	59.84	5 69
"	m.o.	57.83	5 65
Various	"	57.14	4 74
"	m.u.	58.80	3 29
"	f.o.	59.14	4 21
"	f.u.	60.00	2 40
Average for all occupations	m.o.	58.88	9 18
" "	m.u.	56.41	3 11
" "	f.o.	57.21	4 58
" "	f.u.	55.30	2 06
All classes		58.68	8 63

LABOR AND WAGES.

TABLE No. II.—Showing by occupations the averages of time employed, yearly earnings and cost of living in Almonte, Belleville, Brockville, Carleton Place, Chatham, Cornwall, Galt, Gananoque, Guelph, Hamilton, Kingston, London, Oshawa, Ottawa, Peterborough, St. Catharines (Thorold and Merritton), Stratford and Toronto, for the year ending December 31, 1887, based on returns collected from 3,354 workpeople.

Occupation or Sub-Occupation.	Sex and age, over or under 16 years.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
		Total.	Under 16 years.	Average hours per week.	Days in year.	Wages from occupation.	Extras.	Wife and minor children.	Total.	
						$ c.	$ c.	$ c.	$ c.	$ c.
Apprentice (various)	m.o.	.....	.....	57.29	281.63	191 03	1 86	.....	192 89	189 82
" "	m.u.	.....	.....	56.33	264.17	134 12	.....	.....	134 12	154 00
Axe factory employé:										
Bit drawer	m.o.	4.14	3.14	54.00	228.57	517 18	.....	.....	517 18	468 50
Grinder	"	2.25	1.56	54.19	258.06	365 45	.....	4 50	369 95	350 94
Hammerer	"	1.50	1.00	56.25	196.50	393 88	.....	.....	393 88	358 50
Heater	"	2.00	1.45	54.00	246.00	355 91	.....	3 27	359 18	267 82
Poll maker	"	2.00	1.50	57.00	278.00	486 00	.....	.....	486 00	385 00
Polisher	"	1.90	1.40	54.10	241.20	367 48	.....	4 80	372 28	340 10
Temperer	"	1.50	1.00	54.00	291.50	512 25	.....	.....	512 25	437 50
Baker	"	1.86	0.95	64.14	304.50	467 07	4 55	19 09	490 71	394 27
Barber	"	2.06	1.42	71.00	291.16	417 35	0 81	1 93	420 09	378 97
Blacksmith	"	2.76	1.82	58.95	270.80	435 66	5 50	6 39	447 55	390 32
Blacksmith's helper	"	2.71	1.95	57.93	258.19	321 42	15 47	11 09	347 98	340 31
Boatbuilder	"	2.00	1.00	59.00	297.50	425 00	50 00	20 00	495 00	400 00
Boiler maker	"	3.00	1.79	58.64	287.43	497 43	0 71	7 14	505 28	451 21
Boilermaker's helper	"	2.33	1.33	60.00	300.00	360 00	.....	16 67	376 67	335 00
Bookbindery employé:										
Binder	"	2.67	1.78	56.33	284.33	506 67	24 44	.....	531 11	456 89
Folder	f.o.	.....	.....	53.00	239.00	124 75	.....	.....	124 75	136 57
"	f.u.	.....	.....	52.75	255.00	79 92	.....	.....	79 92	109 25
Forwarder	m.o.	.....	.....	55.00	300.00	362 50	.....	.....	362 50	298 50
Ruler	"	5.00	3.50	57.00	287.50	562 50	37 50	.....	600 00	560 00
Sewer	f.o.	.....	.....	54.67	265.00	172 50	.....	.....	172 50	169 67
Various	"	0.67	0.33	55.00	300.00	200 00	.....	.....	200 00	203 67
"	m.o.	1.75	1.25	55.00	253.75	485 00	.....	.....	485 00	462 25
Book-keeper	"	2.20	1.46	59.87	302.53	673 80	26 67	.....	700 47	465 73
Boot and shoe factory employé:										
Cutter	"	1.00	0.33	51.67	245.67	328 00	66 67	50 00	444 67	378 33
Finisher	"	.....	.....	57.00	272.50	402 50	.....	.....	402 50	250 50
Laster	"	.....	.....	59.00	300.00	375 00	.....	.....	375 00	287 50
Trimmer	"	5.33	3.67	59.00	300.00	500 00	.....	.....	500 00	463 00
Various	"	0.67	.....	54.33	293.33	338 00	.....	16 67	354 67	324 33
Bottler	"	.....	.....	60.00	300.00	385 00	.....	.....	385 00	347 50
Brass finisher	"	3.00	1.50	59.00	289.00	445 00	50 00	.....	495 00	468 00
Brewer	"	1.00	0.67	63.33	248.33	382 50	50 00	.....	432 50	346 67
Bricklayer	"	2.75	1.78	58.69	175.44	441 68	3 89	5 83	451 40	418 72
Brickmaker	"	2.60	1.80	59.80	174.00	232 50	37 40	8 00	277 90	269 40
Broom maker	"	0.67	.....	55.33	280.00	400 67	.....	.....	400 67	243 33
Brush maker	"	3.00	2.40	56.20	275.40	460 43	.....	.....	460 43	411 23
Butcher	"	2.27	1.64	64.91	308.91	369 62	.....	.....	369 62	336 64
Carpenter	"	3.43	2.29	53.41	240.01	411 34	6 13	12.17	429 64	398 53
Carpet weaver	"	4.60	2.20	55.40	276.00	377 22	.....	.....	377 22	312 95
"	f.o.	.....	.....	59.33	276.67	138 00	.....	.....	138 00	124 33
Carriage works employé:										
Top maker	m.o.	2.00	1.50	55.00	271.50	412 50	.....	.....	412 50	300 25
Trimmer	"	1.25	0.56	59.13	247.50	410 19	5 31	.....	415 50	328 31
Woodworker	"	2.14	1.36	58.95	263.32	402 05	19 27	3 27	424 59	353 50
Various	"	3.75	2.08	59.50	279.42	408 50	12 08	33 59	454 17	412 50
Carrier boy	"	.....	.....	59.00	300.00	112 50	.....	.....	112 50	112 50
Caulker	"	3.40	2.40	58.80	224.40	353 70	2 00	14 40	370 10	377 20
Cigar factory employé:										
Cigar maker	"	1.59	1.00	48.71	280.18	357 42	6 61	2 94	366.97	323.70
Stripper	"	.....	.....	54.00	300.00	112 50	.....	.....	112.50	112.55
Various	f.o.	.....	.....	54.75	288.50	133 00	.....	.....	132.00	120.75

TABLE No. II.—LABOR AND WAGES—*Continued.*

Occupation or Sub-Occupation.	Sex and age, over or under 16 years.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
		Total.	Under 16 years.	Average hours per week.	Days in year.	Wages from occupation.	Extras.	Wife and minor children's.	Total.	
						$ c.	$ c.	$ c.	$ c.	$ c.
Confectioner	f.o.	.....	.....	55.00	285.00	112 67	.....	.....	112 67	112 67
"	m.o.	3.00	2.09	58.09	262.82	421 99	.....	3 27	425 26	397 55
Cooper	"	3.04	1.85	57.52	266.44	366.07	5 11	13 97	385 15	354 46
Corset maker	f.o.	.....	.....	50 00	287.50	175 00	.....	.....	175 00	150 00
Cotton mill operative :										
Carder	m.o.	1.22	0.89	60.00	291.00	356 01	.....	8 33	364 34	308 72
Dye house hand	"	3.00	1.67	59.67	275.00	299 33	.....	72 93	372 26	387 00
Loom fixer	"	2.25	1.25	60.25	270.50	508 75	.....	.....	508 75	402 25
Speeder tender	f.o.	.....	.....	60.36	254.43	200 01	.....	.....	200 01	180 43
Spinner	m.o.	2.00	1.25	60.00	282.75	385 71	6 25	36 25	428 21	363 40
Weaver	"	1.25	0.75	60.29	258.17	299 97	.....	62 50	362 47	282 67
"	f.o.	.....	.....	60.00	277.60	247 80	.....	.....	247 80	184 40
Various	"	.....	.....	59.64	275.00	223 75	.....	.....	223 75	193 00
"	m.o.	1.67	1.00	60.33	279.67	354 62	2 50	.....	357 12	308 46
Dressmaker	f.o.	.....	.....	60.00	284.14	167 30	.....	.....	167 30	161 68
Editor	m.o.	2.50	1.50	48.00	302.50	725 00	.....	.....	725 00	600 00
Engineer, stationary	"	3.29	2.04	65.06	291.58	456 65	8 54	11 04	476 23	411 40
Fanning mill maker	"	3.33	2.33	57.67	243.00	410 00	.....	.....	410 00	347 67
Fireman, general	"	2.54	1.46	58.88	270.85	388 62	5 77	34 61	429 00	382 69
Foreman :										
Axe factory	"	3.33	2.33	54.00	293.33	858 83	.....	.....	858 83	565 00
Broom maker	"	3.00	1.00	57.00	306.00	611 00	.....	58 50	669 50	569 50
Cotton mills	"	2.75	1.75	60.00	294.00	569 50	.....	.....	569 50	430 25
Knitting mills	"	3.50	2.38	59.94	312.19	956 38	.....	.....	956 38	556 25
Lumber mills	"	7.00	4.75	71.75	269.50	830 07	18 75	.....	848 82	664 00
Miller	"	3.33	2.33	66.00	254.33	574 00	26 00	.....	600 00	533 33
Paper mills	"	4.00	3.00	54.00	301.00	738 50	.....	.....	738 50	506 75
Planing mills	"	5.00	4.00	60.00	306.50	613 00	.....	.....	613 00	462 50
Plumber	"	4.00	2.83	59.33	287.17	673 17	.....	.....	673 17	496 33
Printer	"	4.64	3.09	56.00	301.55	736 25	.....	35 46	771 71	554 73
Railway, shop	"	5.67	4.33	59.67	294.00	536 33	.....	40 00	576 33	527 67
Tannery	"	3.00	2.00	60.00	302.50	681 00	.....	.....	681 00	692 00
Woollen mills	"	3.40	2.60	60.00	301.20	700 14	6 00	.....	706 14	498 60
Various	"	3.87	2.93	57.43	282.93	586 91	4 00	13 33	604 24	506 77
Furniture factory employé :										
Cabinet maker	"	2.31	1.54	57.50	285.80	437 89	12 29	4 74	454 92	381 89
Carver	"	2.67	1.83	53.83	275.67	588 25	37 50	8 67	634 42	474 33
Chair maker	"	0.75	0.50	52.19	245.00	324 90	.....	.....	324 90	271 40
Finisher	"	2.92	1.83	57.92	290.00	439 96	.....	.....	439 96	374 08
Machine hand	"	2.79	1.57	54.89	260.14	388 39	7 93	12 07	408 39	376 26
Upholsterer	"	1.22	0.78	58.11	262.44	449 72	5 56	11 11	466 39	379 67
Varnisher	"	3.00	1.60	54.80	260.00	432 20	.....	10 00	442 20	424 10
Wood turner	"	3.27	2.06	52.78	245.67	423 90	20 89	11 11	455 90	385 39
Gardener	"	3.60	2.40	58.60	213.60	262 90	59 00	.....	321 90	305 20
Gas works employé	"	3.00	2.00	68.75	334.25	492 50	.....	.....	492 50	392 50
Glove cutter	"	1.60	0.80	60.00	257.40	610 00	.....	.....	610 00	477 00
Glove maker's helper	"	.....	.....	60.00	285.00	193 40	.....	.....	193 40	190 70
Hame maker	"	1.33	0.33	60.00	300.00	450 00	.....	.....	450 00	265 33
Harness maker	"	2.94	1.94	58.41	289.69	416 37	7 94	20 12	444 43	391 17
Horse shoer	"	3.50	2.63	59.25	280.50	438 68	.....	.....	438 68	409 00
Knitting mills operative	"	1.41	0.85	60.00	311.66	361 46	.....	.....	361 46	283 19
" "	f.o.	.....	.....	60.00	187.83	120 38	.....	.....	120 38	137 00
Laborer	m.o.	3.08	2.10	59.41	221.48	270 67	10 53	15 11	296 31	319 93
Lamplighter	"	4.50	3.00	48.00	270.00	300 00	20 00	25 00	345 00	336 50
Locksmith	"	0.50	0.50	54.50	306.00	508 50	.....	.....	508 50	352 00
Lumber mill employé:										
Butter	"	4.00	3.00	69.00	190.00	253 35	18 75	21 25	293 35	355 75
Culler	"	3.80	2.80	67.20	209.40	313 40	14 40	15 20	343 00	367 80

TABLE No. II.—LABOR AND WAGES—*Continued.*

Occupation or Sub-Occupation.	Sex and age, over or under 16 years.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
		Total.	Under 16 years.	Average hours per week.	Days in year.	Wages from occupation.	Extra.	Wife and minor children.	Total.	
						$ c.	$ c.	$ c.	$ c.	
Lumber mill employé :—*Con.*										
Edger	m.o.	3.00	2.25	69.00	190.00	283 75	.....	17 50	301 25	321 50
Filer	"	4.00	3.00	84.00	188.67	424 83	.....	12 00	436 83	440 67
Sawyer	"	3.18	2.14	63.20	218.73	304 35	3 27	19 96	327 58	317 27
Various	"	2.50	1.50	51.50	186.00	265 00	50 00	.....	315 00	327 50
Machine hand	"	1.67	0.83	57.92	278.00	391 08	14 00	.....	405 08	318 33
Machinist	"	2.50	1.68	57.24	267.61	432 64	8 15	9 86	450 65	374 45
Marble cutter	"	3.30	2.30	58.45	226.90	482 63	13 75	6 00	502 38	393 58
Marble polisher	"	2.57	2.14	59.00	268.43	359 70	.....	.....	359 70	345 97
Marine employé :										
Captain	"	3.00	2.00	.....	232 50	495 00	.....	.....	495 00	485 50
Engineer	"	2.33	0.67	77.33	220 00	410 00	.....	.....	410 00	418 00
Mate	"	3.60	2.40	.....	183.00	285 00	8 00	14 00	307 00	330 40
Sailor	"	1.32	0.91	97.82	158.41	221 63	10 91	11 36	243 90	245 09
Mason (stone)	"	3.16	2.11	58.49	172.11	436 90	11 78	6 89	455 57	406 40
Mattrass maker	"	.....	.....	54.00	275.00	498 00	.....	.....	498 00	399 00
" "	f.o.	.....	.....	45.00	287.50	178 13	.....	.....	178 13	175 00
Miller	m.o.	3.13	1.81	69.50	293.69	475 44	.....	.....	475 44	412 25
Milliner	f.o.	.....	.....	55.75	248.75	317 50	.....	.....	317 50	272 50
Millwright	m.o.	3.17	2.08	73.83	228.67	420 79	7 08	.....	427 87	396 42
Miscellaneous	"	1.98	1.24	58.36	272.90	358 63	9 14	10 24	378 01	327 88
"	f.o.	0.25	.....	54.25	260.50	260 19	.....	.....	260 19	228 02
"	f.u.	.....	.....	55.50	289.00	97 63	.....	.....	97 63	114 75
"	m.u.	.....	.....	53.88	278.53	147 16	.....	.....	147 16	165 15
Moulder	m.o.	3.41	2.19	58.35	252.66	493 23	6 42	13 67	513 32	437 55
Organ factory employé :										
Action maker	"	2.57	1.43	59.43	292.00	515 14	.....	.....	515 14	494 86
Band sawyer	"	3.00	2.33	59.67	281.67	403 33	.....	.....	403 33	345 00
Bellows maker	"	2.67	2.00	59.67	300.00	494 67	8 33	.....	503 00	409 33
Tuner	"	3.50	2.50	53.50	275.00	800 00	.....	.....	800 00	736 00
Various	"	0.40	.....	57.80	284.00	400 00	46 00	.....	446 00	324 00
Packer	"	3.00	2.00	60.30	281.70	386 35	24 00	20 00	430 35	359 70
Painter	"	2.45	1.73	57.84	244.38	393 94	7 71	3 66	405 31	357 16
Paper hanger	"	2.00	0.50	60.00	275.00	562 00	37 50	.....	599 50	447 50
Paper mills employé :										
Bag and box maker	"	.....	.....	54.00	295.33	205 19	.....	.....	205 19	202 67
"	f.o.	0.13	0.04	54.00	297.38	215 81	.....	.....	215 81	207 42
Machine tender	"	.....	.....	54.00	298.80	174 50	.....	.....	174 50	172 30
"	m.o.	1.25	0.75	57.00	295.38	393 38	.....	.....	393 38	322 13
Various	"	1.50	1.00	55.50	292.50	460 15	.....	.....	460 15	401 50
"	f.o.	0.33	.....	59.67	289.00	181 45	.....	.....	181 45	189 71
Pattern maker	m.o.	1.50	.....	59.00	284.75	493 80	.....	50 00	543 80	405 50
Piano factory employé :										
Action maker	"	.....	.....	57.00	290.00	541 21	.....	.....	541 21	435 00
Case maker	"	1.67	0.67	57.00	290.00	531 67	.....	.....	531 67	469 17
Finisher	"	2.75	2.25	59.00	242.50	393 75	12 50	.....	406 25	370 00
Rubber	"	2.50	1.00	57.00	245.00	413 00	.....	.....	413 00	408 93
Sounding board maker	"	2.50	1.50	57.00	290.00	615 94	.....	.....	615 94	457 38
Varnisher and polisher	"	1.11	0.67	57.33	267.22	462 42	.....	.....	462 42	417 19
Various	"	3.33	2.33	61.33	278.67	423 33	66 67	.....	490 00	412 33
Pickle maker	f.o.	.....	.....	60.00	243.50	121 50	.....	.....	121 50	121 50
Plasterer	m.o.	1.75	1.17	54.17	198.67	499 25	6 54	3 00	508 79	431 75
Plumber and gasfitter	"	2.09	1.52	56.26	240.33	458 38	.....	4 78	463 16	395 37
Polisher (metal)	"	2.38	1.50	58.38	235.25	313 97	22 50	3 00	339 47	316 18
Porter	"	5.00	3.00	72.00	314.00	374 33	.....	83 33	457 66	428 33
Press feeder	"	0.40	0.30	55.00	280.20	271 74	.....	.....	271 74	278 55
"	f.o.	0.33	.....	58.33	299.00	195 43	17 35	.....	212 78	209 45
Pressman	m.o.	1.04	0.71	56.71	282.63	409 21	19 58	4 17	432 96	355 50
Printer	"	1.76	1.04	54.63	255.52	424 78	6 13	9 77	440 68	395 77
Quarryman	"	1.50	0.50	59.00	203.00	262 50	40 00	95 00	397 50	355 00

TABLE No. II.—LABOR AND WAGES.—*Continued.*

Occupation or Sub-Occupation.	Sex and age, over or under 16 years.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
		Total.	Under 16 years.	Average hours per week.	Days in year.	Wages from occupation.	Extra.	Wife and minor children's.	Total.	
						$ c.	$ c.	$ c.	$ c.	$ c.
Railway (road) employé :										
Brakesman	m.o.	1.33	0.83	61.08	297.25	485 73	10 42	.....	496 15	373 08
Car cleaner	"	3.00	2.25	62.75	309.50	355 25	.....	5 00	360 25	333 00
Conductor	"	3.00	2.00	73.33	298.67	733 19	5 56	.....	738 75	442 00
Engineer	"	2.60	1.60	61.00	315.30	742 70	5 00	.....	747 70	482 80
Examiner or tapper	"	3.00	2.00	79.00	312.50	504 80	.....	.....	504 80	427 50
Fireman	"	0.54	0.27	60.73	309.36	508 36	4 55	.....	512 91	355 91
Switchman	"	2.50	1.67	67.17	314.83	437 23	8 33	.....	445 56	350 47
Wiper	"	0.88	0.62	69.38	332.50	328 02	9 38	.....	337 40	290 50
Various	"	2.29	1.14	58.57	296.43	434 27	.....	35 71	469 98	402 57
Railway (shop) employé :										
Car builder	"	5.33	4.00	41.67	243.33	333 33	16 67	5 00	355 00	407 00
Car repairer	"	1.78	0.78	63.44	294.56	407 54	.....	18 33	425 87	378 44
Fitter	"	1.00	0.67	59.33	272.50	442 15	0 33	.....	442 48	397 98
Woodworker	"	3.33	2.33	54.00	284.00	435 13	25 00	.....	460 13	383 33
Various	"	3.60	1.80	58.60	275.40	436 92	.....	.....	436 92	422 60
Reporter	"	1.00	0.33	60.00	308.33	454 67	83 33	.....	538 00	478 00
Salesman	"	1.48	0.71	63.13	301.50	411 07	5 36	4 46	420 89	339 89
Saleswoman	f.o.	.....	.....	59.22	282.33	213 45	.....	.....	213 45	214 33
Sash, door and blind maker	m.o.	2.00	1.00	59.00	300.00	475 00	.....	.....	475 00	375 00
Saw works employé :										
Filer	"	.....	.....	59.00	255.00	382 50	.....	.....	382 50	343 50
Grinder	"	2.00	2.00	56.00	256.50	559 75	.....	.....	559 75	536 00
Handle maker	"	1.67	0.33	58.00	288.67	500 00	.....	.....	500 00	429 67
Sawsmith	"	3.50	2.00	58.00	280.00	650 00	.....	130 00	780 00	679 50
Various	"	5.00	4.00	58.00	290.00	410 00	45 60	14 00	469 60	490 60
Screw maker	"	.....	.....	59.00	252.00	305 33	25 00	.....	330 33	245 33
Sewing machine maker	"	3.75	2.50	58.50	202.88	371 38	31 25	1 87	404 50	453 27
Shipper	"	1.13	0.63	54.38	287.88	355 63	.....	.....	355 63	338 31
Shirtmaker	f.o.	.....	.....	60.00	300 00	145 00	.....	.....	145 00	145 00
Shoemaker	m.o.	3.15	2.13	58.51	259.36	349 75	1 70	23 28	374 73	350 89
Stave cutter	"	1.50	1.00	49.00	200.00	250 00	35 75	.....	285 75	275 00
Stove foundry employé :										
Fitter	"	4.00	2.67	59.33	271.67	518.67	.....	6 66	525 33	550 50
Melter	"	3.20	1.60	59.30	224.80	310 60	24 40	.....	335 00	317 80
Mounter	"	2.42	1.17	59.17	224.17	348 91	2 42	2 50	353 83	344 50
Various	"	1.80	1.40	59.60	258.00	389 05	.....	.....	389 05	358 20
Street railway employé :										
Driver	"	1.67	1.00	73.33	307.67	364 33	.....	16 67	381 00	408 00
Stableman	"	3.75	2.00	84.00	365.00	409 75	.....	.....	409 75	433 00
Tailor shop employé :										
Cutter	"	1.67	1.00	54.33	303.33	795 33	44 17	.....	839 50	501 33
Tailor	"	2.09	1.37	60.11	253.39	376 05	5 65	1 11	382 81	365 00
Tailoress	f.o.	.....	.....	55.38	252.46	192 93	0 64	.....	193 57	188 58
Tannery employé :										
Beam hand	m.o.	5.20	4.00	59.80	298.00	412 33	20 00	.....	432 33	457 40
Currier	"	3.57	2.29	61.29	265.29	398 57	.....	.....	398 57	401 57
Tanner	"	3.36	1.91	59.73	306.56	409 86	.....	.....	409 86	397 36
Teamster and carter	"	2.80	1.86	60.15	256.08	309 93	23 55	14 17	347 65	330 49
Telegraph operator	"	1.30	0.90	55.67	221.57	380 31	.....	.....	380 31	342 80
"	"	.....	.....	55.00	190.00	208 24	.....	.....	208 24	202 20
Tinsmith	m.o.	2.14	1.50	59.47	267.54	406.31	3 40	0 86	410 57	367 10
Tobacco roller	"	2.25	1.50	56.13	252.38	430 13	3 37	3 94	437 44	353 63
Tool maker	"	3.50	2.50	57.00	290.00	567 50	20 00	.....	587 50	511 00
Traveller	"	2.13	1.25	57.00	303.25	764 38	.....	.....	764 38	474 13
Wagon maker	"	2.00	.....	59.33	260.00	461 33	.....	.....	461 33	430 20
Watch case maker	"	1.50	0.90	59.00	276.00	443 95	.....	.....	443 95	401 35
Watchmaker	"	2.00	1.33	58 67	300.00	530 00	19 17	20 33	569 50	450 00
Watchman and caretaker	"	3.83	2.83	70.33	327.92	408 81	18 75	.....	427 56	381 88
Wheel maker	"	3.20	2.60	56.30	242.60	384 90	10 00	.....	394 90	337 80

TABLE No. II.—LABOR AND WAGES—*Concluded.*

Occupation or Sub-Occupation.	Sex and age, over or under 16 years.	No. of dependents.		Time employed.		Yearly earnings.				Cost of living.
		Total.	Under 16 years.	Average hours per week.	Days in year.	Wages from occupation.	Extra.	Wife and minor children's.	Total.	
						$ c.	$ c.	$ c.	$ c.	$ c.
Woollen mill employé:										
Carder	m.o.	3.33	2.33	60.00	294.67	567 33	.....	.....	567 33	505 00
Card helper	"	.....	.....	60.00	301.83	247 67	.....	.....	247 67	200 83
Dyer	"	2.00	1.25	58.50	299.50	408 50	.....	.....	408 50	344 00
Finisher	"	4.33	2.00	59.67	296.67	448 33	.....	.....	448 33	411 00
"	f.o.	.....	.....	57.00	275.00	128 25	.....	.....	128 25	115 00
Fuller	m.o.	1.50	1.00	60.00	296.50	403 00	.....	50 00	453 00	351 00
Reeler	f.o.	.....	.....	59.50	295.00	120 00	.....	.....	120 00	112 00
Scourer	m.o.	.....	.....	60.00	267.50	214 00	.....	.....	214 00	221 00
Specker	f.o.	.....	.....	60.00	313.00	194 32	.....	.....	194 32	183 33
Spinner	m.o.	1.86	1.29	59.00	279.79	352 69	.....	.....	352 69	304 21
"	f.o.	.....	.....	60.00	306.50	152 17	.....	.....	152 17	152 00
" helper	m.u.	.....	.....	60.00	313.00	152 24	.....	.....	152 24	151 35
" "	m.o.	.....	.....	60.80	310.40	181 33	.....	.....	181 33	153 70
Spooler	f.o.	.....	.....	58.00	296.67	138 00	.....	.....	138 00	127 00
Warper	"	.....	.....	60.00	300.00	200 00	.....	.....	200 00	175 00
Weaver	m.o.	.....	.....	57.83	271.00	254 48	.....	.....	254 48	222 83
"	f.o.	.....	.....	59.84	303.66	286 90	.....	.....	286 90	204 68
Various	m.o.	0.57	0.29	57.14	284.29	227 57	4 71	.....	232 28	181 86
"	m.u.	.....	.....	58.80	301.20	170 89	.....	.....	170 89	153 17
"	f.o.	2.00	1.29	59.14	294.43	220 16	15 00	21.14	256 30	236 00
"	f.u.	.....	.....	60.00	277.50	104 50	.....	.....	104 50	104 50
Average for all occupations	1887 m.o.	2.36	1.55	58.90	260.93	392 82	7 48	8 28	408 58	360 88
	1886 "	2.57	1.64	58.21	270.18	403 38	8 22	10 13	421 73	370 97
" " "	1887 m.u.	.....	.....	56.44	287.93	150 51	.....	.....	150 51	158 05
	1886 "	.....	.....	57.90	267.29	119 52	0 72	.....	120 24	117 95
" " "	1887 f.o.	0.12	0.05	57.25	280.88	214 77	0 72	0 46	215 95	190 34
	1886 "	0.11	0.04	57.15	272.19	190 32	3 55	1 31	195 18	163 90
" " "	1887 f.u.	.....	.....	55.30	273.00	91 90	.....	.....	91 90	110 50
	1886 "	.....	.....	59.56	285.10	131 25	.....	.....	131 25	130 69
All classes	1887	2.11	1.38	58.70	263.21	371 87	6 71	7 41	385 99	341 28
	1886	2.33	1.48	58.13	270.41	381 83	7 72	9 26	398 81	350 36
	1885	2.15	1.38	58.85	271.28	372 98	6 72	9 15	388 85	332 50
	1884	2.18	*	59.10	265.17	372 29	4 33	6 69	383 31	334 47
	1884-7	2.19	1.41	58.70	267.52	374 74	6 37	8 13	389 24	339 65

NOTE.—In this table the number of dependents is the average for the total number of workpeople in the several occupations, and the worker himself is not included. The term 'various' in this and preceding table includes single returns of occupations not elsewhere specified.

* Not called for in schedule of 1884.

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO,

1887.

PART V.—LOAN AND INVESTMENT COMPANIES.

Printed by Order of the Legislative Assembly.

TORONTO:
PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.
1888.

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SIXTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

PART V.

To the Honorable Charles Drury, Minister of Agriculture:

Sir,—I have the honor to present herewith a statement of the affairs of Loan and Investment Societies in the Province of Ontario, being Part V of the report of the Bureau of Industries for 1887.

Your obedient servant,

A. BLUE, Secretary.

PART V.

LOAN AND INVESTMENT COMPANIES.

STATEMENT OF AFFAIRS.

The returns of affairs of Loan and Investment Societies in Ontario, as required to be made by Chapter 169, section 83 *et sequel* of the Revised Statutes of Ontario, and heretofore tabulated at the Treasury Department, have this year been transferred to the Bureau of Industries. The old schedule used in making those returns has been remodelled, and it is hoped that the new one, while meeting the requirements of the statute, will be commended by its greater definiteness to the officers of Societies who are required to make up the returns. Much valuable assistance in its preparation has been received from Mr. Mason, manager of the Canada Permanent, and Mr. Tomlinson, manager of the British Canadian Loan and Investment Company.

A number of Companies doing business in the province are operating under the authority of Federal charters, and these are not obliged to make returns under the requirements of the Provincial Act. But a majority of them have prepared and forwarded statements, and their statistics appear in the report. The total number whose returns have been tabulated is fifty-five, and there are probably twenty others working under Dominion, Royal, or special Provincial charters. A complete statement of the affairs of all the companies would put the country in possession of useful monetary and banking information, and the returns which would enable the Bureau to compile such a statement annually will doubtless be supplied in the course of time. It is a matter of no small interest to the institutions themselves.

Of the fifty-five companies which have furnished statements, one was organized in 1844; four were organized during the decade 1851-60, twelve in the decade 1861-70, thirty in the decade 1871-80, and eight in the seven years of the present decade. The head offices of nineteen of those companies are in Toronto, of nine in London, of four in St. Thomas, of three in Hamilton, of two each in Ottawa, Kingston and Sarnia, and of one each in Belleville, Brantford, Chatham, Goderich, Guelph, Orangeville, Oshawa, Peterborough, Petrolea, Port Hope, St. Catharines, Stratford, Woodstock and London, England. The statements for forty-six of the companies are for the year ending December 31, 1887, and those of the other nine for various dates in 1887.

The following table presents the amount of subscribed capital, liabilities and assets in four cities having three or more companies, and the balance under each head for all other places:*

	Hamilton.	London.	St. Thomas.	Toronto.	Other places
	$	$	$	$	$
Capital subscribed.....	2,463,516	9,680,500	1,417,350	36,434,944	6,118,000
Liabilities to stockholders...	2,087,658	7,560,150	938,747	19,759,221	5,564,787
Liabilities to the public	2,881,604	9,513,881	589,003	32,444,506	5,748,110
Total liabilities.....	4,969,262	17,074.031	1,527,750	52,203,727	11,312,897
Secured loan assets	4,686,599	15,532,303	1,498,558	46,706,261	10,612,083
Property assets.....	1,173,663	1,541,728	29,192	4,423,240	884,040
Total assets	5,860,262	17,074,031	1,527,750	51,129,501	11,496,123

*The Trust and Loan Company of Canada, whose head office is in London, Eng., is included with the Toronto Companies.

The thirty-six companies doing business in the four cities named in the foregoing table have 89 per cent. of the subscribed capital, nearly 87 per cent. of the assets and a little over 87 per cent. of the liabilities of all the companies represented in the tabulated statement of affairs; while Toronto's twenty companies alone have 65 per cent. of the subscribed capital, 58¾ per cent. of the assets and 60 per cent. of the liabilities.

There are fourteen companies in which a portion of the stock has been fully paid up, the amount being $11,342,861, and there are four companies in which the whole of the subscribed stock has been paid. On the remaining $44,771,449 of subscribed capital there has been paid $15,429,167, or about 34½ per cent. The reserve fund is $7,254,105, being 13 per cent. of the subscribed and 27 per cent. of the paid-in capital. These and several smaller items constitute the liabilities to stockholders, the aggregate of which is $35,910,563. The liabilities to the public consist of $17,533,413 in deposits, $32,222,692 in debentures (only $5,500,622 of which is payable in Canada) and $1,420,999 in other liabilities. The aggregate of liabilities to stockholders and the public is $87,087,667.

The assets of the companies consist of $79,035,804 in secured loans and $8,051,863 in property. Of loans, the amount secured on real estate of general borrowers is $74,954,076 and $252,957 on real estate of directors and officers of the companies; while on shareholders' stock the amount loaned is $852,267, and on stock of officers and directors $177,465. Loans otherwise secured amount to $2,799,039. The property assets consist principally of five classes, viz.: municipal, school section and loan company debentures to the value of $1,153,165; cash on hand and in banks, $2,201,361; office premises, $751,971; real estate foreclosed, $1,091,961, and other property, $2,826,033. The aggregate of loan and property assets is $87,087,667.

Only two of the fifty-five companies passed their dividends for the year; and of the fifty-three which declared dividends one paid 5 per cent., fourteen paid 6, one paid 6½, twenty-four paid 7, one paid 7½, six paid 8, five paid 10 and one paid 12. The average dividend for all the companies, exclusive of the two non-earning ones, was nearly 7⅔ per cent. on paid up capital, or an aggregate of $2,021,207. The average rate of interest on total amount secured by mortgages in all the companies ranged from 6 to 8 per cent.; on amount loaned on mortgages in the year, from 6 to 8 per cent.; on debentures, from 4.33 to 5.44 per cent.; and on deposits, from 3.16 to 5.28 per cent. The amount of interest paid and accrued on debentures in the year was $1,552,621, and on deposits $685,138. The amount received as interest from borrowers is not given separately for all the companies, but the principal and interest so received was $18,987,927. The amounts received from and repaid to depositors during the year, although differing considerably in each company, are almost equal in the aggregates of all the companies—the deposits being $25,283,071 and the withdrawals $25,283,441. The amount of debentures issued during the year was $6,263,884, and the amount repaid was $4,346,294.

The amount invested and secured by mortgage by all the companies is $75,433,882, of which $29,691,591 is on mortgages payable by instalments, and $45,742,291 on mortgages payable at stated periods—the estimated cash value of all investments being $84,080,682. It appears, however, that of the $75,433,882 invested by the companies, the large sum of $45,288,518 has been borrowed by them for that purpose.

The number of mortgages on which proceedings were taken during the year was 688, and the amount of such mortgages $1,419,012. The value of mortgaged property held for sale was $2,540,788, and the amount chargeable against such property $2,190,465.

The cost of management for all the companies during the year was $685,905, being about 2½ per cent. on their paid up capital.

LOAN AND INVESTMENT COMPANIES.

TABLE No. I.—Companies reporting Statement of Affairs as required by Chapter 169, Section 83, *et seq.*, R. S. O. 1887, or by provisions of Special Charters.

	Name of Company.	When Organized.	President.	Manager.	Head Office.	For Year ending—
1	Hastings Loan and Invest. Soc'y.	Jan., 1876.	Hon. M. Bowell....	J. P. C. Phillips....	Belleville	Dec. 31, 1887.
2	Royal Loan and Savings Co'y ...	June 1, 1876.	A. S. Shenston.....	R. S. Schell.....	Brantford....	Dec. 31, 1887.
3	Chatham Loan and Savings Co'y.	Sept. 28, 1881.	Archibald Bell.....	Samuel F. Gardiner	Chatham	Dec. 31, 1887.
4	Huron and Bruce Loan and Investment Co'y.....	June, 1885.	Joseph Williams...	Horace Horton	Goderich	Dec. 31, 1887.
5	Guelph and Ontario Investment and Savings Society.....	.... 1876.	David Stirton.....	Geo. A. Somerville.	Guelph.....	Dec. 31, 1887.
6	Hamilton Provident and Loan Soc'y	Sept., 1871.	George A. Gillespie.	H. D. Cameron	Hamilton....	Dec. 31, 1887.
7	Hamilton Homestead Loan and Savings Soc'y.....	Jan. 1, 1883.	J. E. O'Reilly.....	I. A. Studdart.....	Hamilton....	Dec. 31, 1887.
8	Landed Banking and Loan Co'y.	Feb., 1877.	Matthew Leggat ...	Samuel Slater.....	Hamilton....	Dec. 31, 1887.
9	Frontenac Loan and Invest. Soc'y.	Dec., 1863.	Jas. A. Henderson .	Thomas Briggs	Kingston	Dec. 31, 1887.
10	Ontario Building & Savings Soc'y.	June 26, 1874.	William Ford	James McArthur...	Kingston	Dec. 31, 1887.
11	Agricultural Savings & Loan Co'y	May, 1872.	William Glass.....	W. A. Lipsey	London	Dec. 31, 1887.
12	Canadian Savings and Loan Co'y.	October, 1875.	James Durand	H. W. Blinn.....	London.....	May 31, 1887.
13	Dominion Savings and Investment Soc'y.....	April, 1872.	Robert Reid	F. B. Leys.....	London.....	Dec. 31, 1887.
14	Empire Loan Co'y.....	April 15, 1881.	F. R. Eccles	George Pritchard ..	London.....	Dec. 31, 1887.
15	Huron and Erie Loan and Savings Co'y.....	.... 1864.	John W. Little.....	Robert W. Smylie	London.....	Dec. 31, 1887.
16	London Loan Co'y.....	.... 1877.	Thomas Kent	Malcolm J. Kent...	London.....	Dec. 31, 1887.
17	Ontario Investment Association.	May, 1880.	Daniel Macfie	Alfred A. Booker ..	London.....	Dec. 31, 1887.
18	Ontario Loan and Debenture Co'y	October, 1870.	Joseph Jeffery.....	William F. Bullen..	London.....	Dec. 31, 1887.
19	Royal Standard Loan Co'y	August, 1877.	C. N. Spencer.....	D. McMillan	London.....	Dec. 31, 1887.
20	Orangeville Building and Loan Association	.... 1873.	James S. Fead	Francis Irwin.....	Orangeville ..	Dec. 31, 1887.
21	Ontario Loan and Savings Co'y..	March, 1873.	William F. Cowan..	T. H. McMillan....	Oshawa.....	Dec. 31, 1887.
22	Civil Service Building and Savings Soc'y	.... 1866.	W. H. Griffin	J. Ashworth	Ottawa	Dec. 31, 1887.
23	Metropolitan Loan and Savings Co'y	August, 1870.	H. O. Noel.....	C. R. Cunningham.	Ottawa	Dec. 31, 1887.
24	Central Canada Loan and Savings Co'y.....	April 1, 1884.	George A Cox.....	D. M. Sim	Peterborough	Dec. 31, 1887.
25	Crown Savings and Loan Co'y...	Jan. 30, 1872.	John H. Fairbank .	John Fraser	Petrolea	Dec. 31, 1887.
26	Midland Loan and Savings Co'y.	.... 1873.	John Mulligan.....	George M. Furby...	Port Hope...	Dec. 31, 1887.
27	Huron and Lambton Loan and Savings Co'y	Nov., 1877.	Hon. T. B. Pardee .	M. Fleming.....	Sarnia	Dec. 31, 1887.
28	Lambton Loan and Invest. Co'y.	.... 1844.	Charles Mackenzie .	Robert S. Gurd	Sarnia	June 30, 1887.
29	Security Loan and Savings Co'y.	Mar. 15, 1870.	Thomas R. Merritt.	A. M. Macrae	St. Catharines	Dec. 31, 1887.
30	Elgin Loan and Savings Co'y ...	May 1, 1879.	Edward Miller	George Rowley	St. Thomas ..	Dec. 31, 1887.
31	Southern Loan and Savings Co'y.	.... 1870.	Samuel Eccles	Alfred J. Allworth .	St. Thomas ..	Dec. 31, 1887.
32	Southwestern Farmers' and Mechanics Savings and Loan Soc'y	Feb., 1875.	E. W. Gustin	George Suffel	St. Thomas ..	Dec. 31, 1887.
33	Star Loan Co'y.....	Aug. 23, 1881.	G. E. Casey	D. M. Tait.....	St. Thomas ..	Feb. 29, 1888.
34	British Mortgage Loan Co'y....	October, 1877.	Andrew Monteith..	Wm. Buckingham..	Stratford	Dec. 31, 1887
35	Bristol and W. of Eng. Canadian Land Mortgage & Invest. Co'y..	Mar. 25, 1878.	T. S. Stayner	Wm. Kersteman, jr.	*Toronto	Dec. 31, 1887
36	Building and Loan Association..	Mar. 1, 1870.	Larratt W. Smith ..	Walter Gillespie....	Toronto	Dec. 31, 1887.
37	Canada Landed Credit Co'y	.... 1858.	John L. Blaikie....	David McGee	Toronto	Dec. 31, 1887.
38	Canada Permanent Loan and Savings Co'y	.... 1855.	Edward Hooper....	J. H. Mason.....	Toronto . ..	Dec. 31, 1887.
39	Dovercourt Land, Building and Savings Co'y	Dec. 16, 1885.	James Brandon	A. G. Lightbourn..	Toronto	Dec. 31, 1887.
40	Farmers' Loan and Savings Co'y.	October, 1871.	William Mulock....	Geo. S. C. Bethune.	Toronto	April 30, 1887.
41	Freehold Loan and Savings Co'y.	May, 1859.	Alexander T. Fulton	Hon. S. C. Wood...	Toronto	April 30, 1887.
42	Home Savings and Loan Co'y...	April 25, 1877.	Hon. Frank Smith .	James Mason	Toronto	Dec. 31, 1887.
43	Imperial Loan and Invest. Co'y.	Sept. 14, 1869.	Sir Alex. Campbell.	Edward H. Kirtland	Toronto	Dec. 31, 1887.
44	Land Security Co'y.....	Dec., 1873.	Major George Greig	W. I. Mackenzie...	Toronto	Dec. 31, 1887.
45	London and Canadian Loan and Agency Co'y	Jan. 1, 1873.	Sir W. P. Howland.	J. G. Macdonald ...	Toronto	Aug. 31, 1887.
46	National Investment Co'y	.... 1876.	John Hoskin..	Andrew Rutherford	Toronto	Dec. 31, 1887.
47	North of Scotland Canadian Mortgage Co'y	Dec. 17, 1875.	James W. Barclay..	Osler & Hammond .	Toronto	Nov. 11, 1887.
48	Ontario Industrial Loan and Investment Co'y.....	Jan. 5, 1880.	James Gormley	Edm. T. Lightbourn	Toronto	Dec. 31, 1887.
49	People's Loan and Deposit Co'y.	March, 1875.	William Elliot	James Watson	Toronto	Dec. 31, 1887.
50	Real Estate Loan Co'y.....	Dec., 1879.	T. R. Wadsworth ...	Benjamin Morton..	Toronto	Dec. 31, 1887.
51	Toronto Land and Loan Co'y....	May 27, 1881.	Arthur Harvey ...	William C. Beddome	Toronto	Aug. 31, 1887.
52	Trust and Loan Co'y.....	Oct. 1, 1851.	Rt. Hon. P. Bouverie	†Richard J. Evans..	London, Eng.	Sept. 30, 1887.
53	Union Loan and Savings Co'y..	March, 1865.	Francis Richardson.	William Maclean...	Toronto	Dec. 31, 1887.
54	Western Canada Loan and Savings Co'y.....	March, 1863.	Hon. G. W. Allan..	Walter S. Lee.....	Toronto	Dec. 31, 1887.
55	Oxford Permanent Loan and Savings Soc'y.....	.... 1865.	William Grey.....	William Grey.....	Woodstock ..	Dec. 31, 1887.

* For Canada. Head Office of Company, Bristol, Eng.; Wm. Smith & Co., Managers. † Commissioner for Canada.

LOAN AND INVESTMENT COMPANIES.

TABLE No. II.—Statement of the Affairs of Loan and Investment Companies in the Province by provisions of

No.	Schedule.	Hastings Loan Company, Belleville.	Royal Loan Company, Brantford.	Chatham Loan Company, Chatham.	Huron and Bruce Loan Company, Goderich.	Guelph and Ontario Loan Company, Guelph.
		$	$	$	$	$
	Capital Stock.					
1	Capital authorized	250,000	500,000	1,000,000	500,000	500,000
2	Capital subscribed	225,000	500,000	315,300	150,000	400,000
	Liabilities.					
3	Liabilities to stockholders	197,182	574,633	73,343	108,499	385,148
(1)	Stock fully paid up	.....	425,400	.....	.....	286,150
2)	Stock on which has been paid	178,158	56,955	71,843	105,401	20,000
(3)	Accumulating stock	.....	.....	.....	.....	2,776
(4)	Reserve fund	12,807	66,000	1,500	.....	64,000
(5)	Dividends declared and unpaid	6,217	18,533	.....	2,803	10,611
(6)	Contingent fund and unappropriated profits	.....	7,745	.....	295	1,611
4	Liabilities to the public	133,383	593,508	175,694	62,493	798,156
(1)	Deposits	113,383	383,008	175,694	62,493	291,467
(2)	Debentures payable in Canada	.....	205,140	.....	.....	490,588
(3)	Debentures payable elsewhere	.....	.....	.....	.....	.....
(4)	Interest on debentures and deposits due and accrued	.....	5,360	.....	.....	16,101
(5)	Owing to banks	20,000	.....	.....	.....	.....
(6)	Other liabilities	.....	.....	.....	.....	.....
5	Total liabilities	330,565	1,168,141	249,037	170,992	1,183,304
	Assets.					
6	Secured loan assets	311,584	1,129,619	226,035	155,191	1,131,522
(1)	Real estate of— General borrowers / Directors and Officers of Company	305,826	1,124,367	225,456	155,191	1,125,863
(2)	Shareholders' stock	5,758	4,752	579	.....	3,357
(3)	Directors or Officers of the Company on their stock	.....	500	.....	.....	.....
(4)	Otherwise secured	.....	.....	.....	.....	2,302
7	Property assets	18,981	38,522	23,002	15,801	51,782
(1)	County or city securities, cash value	.....	.....	.....	.....	412
(2)	Township, town or village securities, cash value	.....	.....	.....	.....	301
(3)	School section securities, cash value	.....	.....	.....	.....	.....
(4)	Loan Company debentures	.....	.....	.....	.....	.....
(5)	Office furniture and fixtures	1,638	352	621	590	.....
(6)	Cash on hand	2,201	4,505	2,908	512	.....
(7)	Cash in banks	15,142	24,985	10,411	14,699	51,069
(8)	Office premises	.....	.....	9,062	.....	.....
(9)	Real estate foreclosed	.....	8,680	.....	.....	.....
(10)	Other property	.....	.....	.....	.....	.....
8	Total assets	330,565	1,168,141	249,037	170,992	1,183,304

LOAN AND INVESTMENT COMPANIES.

of Ontario, as required to be furnished by Chapter 169, Section 83, *et seq.*, R. S. O., 1887, or Special Charters.

Hamilton Provident Company, Hamilton.	Homestead Loan Company, Hamilton.	Landed Banking Company, Hamilton.	Frontenac Loan Company, Kingston.	Ontario Building Company, Kingston.	Agricultural Savings Company, London.	Canadian Savings Company, London.	Dominion Savings Company, London.	Empire Loan Company, London.	No.
$	$	$	$	$	$	$	$	$	
1,500,000	1,000,000	700,000	Unlimited	250,000	1,000,000	Unlimited	1,000,000	1,000,000	1
1,500,000	263,516	700,000	200,000	250,000	630,200	750,000	1,000,000	215,000	2
1,362,166	85,613	639,879	244,691	284,459	730,529	843,261	1,124,615	100,251	3
1,000,000	.....	.....	200,000	250,000	.....	.....	.....	65,200	(1)
100,000	55,416	523,100	.....	.....	611,500	678,200	923,600	27,945	(2)
.....	.....	18,917	.....	.....	5,086	1,536	2,942	.....	(3)
200,000	.....	70,000	30,000	.....	88,000	150,000	100,000	7,067	(4)
38,500	.....	15,664	6,272	7,720	21,403	.....	27,708	.....	(5)
23,666	30,197	12,198	8,419	26,739	4,540	13,525	70,365	39	(6)
2,154,686	.....	726,918	260,992	159,436	856,380	864,816	1,105,190	108,488	4
1,088,779	.....	471,198	260,981	159,253	580,468	684,028	708,572	103,890	(1)
153,506	.....	233,129	.....	.....	124,052	141,486	91,311	.....	(2)
781,927	.....	.....	.....	.....	148,433	36,500	286,549	.....	(3)
46,337	.....	6,289	.....	.....	3,181	2,802	18,758	.....	(4)
.....	.....	15,745	.....	.....	.....	.....	.....	4,238	(5)
84,137	.....	557	11	183	246	.....	.....	360	(6)
3,516,852	85,613	1,366,797	505,683	443,895	1,586,909	1,708,077	2,229,805	208,739	5
3,243,444	82,467	1,360,688	400,898	395,478	1,538,927	1,694,668	2,139,099	206,822	6
3,141,459	77,917	1,353,449	332,330	372,990	1,496,353	1,572,855	2,028,772	157,630	(1)
.....	4,550	.....	11,666	.....	.....	.....	.....	1,000	
1,985	.....	7,239	11,306	5,939	21,568	119,106	76,191	44,845	(2)
.....	.....	.....	20,596	16,549	80	1,005	.....	.....	(3)
100,000	.....	.....	25,000	.....	20,926	1,702	34,136	3,347	(4)
273,408	3,146	6,109	104,785	48,417	47,982	13,409	90,706	1,917	7
50,500	.....	.....	.....	8,279	.....	.....	.....	.....	(1)
6,903	.....	.....	.....	.....	2,140	1,427	.....	.....	(2)
87	.....	.....	.....	.....	.....	4,279	.....	.....	(3)
.....	.....	.....	36,117	.....	.....	.....	.....	.....	(4)
.....	390	.....	189	87	500	.....	1,000	507	(5)
3,840	.....	1,109	.....	62	4,631	.....	.....	1,410	(6)
123,078	1,768	.....	53,650	33,961	12,498	1,570	89,669	.....	(7)
89,000	.....	.....	3,716	.....	28,000	.....	.....	.....	(8)
.....	.....	5,000	7,513	5,672	.....	6,133	.....	.....	(9)
.....	988	.....	3,600	356	213	.....	37	.....	(10)
3,516,852	85,613	1,366,797	505,683	443,895	1,586,909	1,708,077	2,229,805	208,739	8

LOAN AND INVESTMENT COMPANIES.

TABLE No. II.—Statement of the affairs of Loan

No.	Schedule.	Huron and Erie Company, London.	London Loan Company, London.	Ontario Investment Company, London.	Ontario Loan Company, London.	Royal Standard Company, London,
	Capital Stock.	$	$	$	$	$
1	Capital authorized	1,500,000	Unlimited	2,750,000	2,000,000	1,000,000
2	Capital subscribed	1,500,000	679,700	2,665,600	2,000,000	240,000
	Liabilities.					
3	Liabilities to stockholders	1,586,622	681,600	735,718	1,563,405	194,149
(1)	Stock fully paid up	1,000,000	.....	.....	1,000,000	.....
(2)	Stock on which has been paid	100,000	610,650	735,718	200,000	168,300
(3)	Accumulating Stock	.....	4,246	.....	.....	3,584
(4)	Reserve fund	437,000	56,704	.....	321,000	16,500
(5)	Dividends declared and unpaid	49,500	.....	.....	42,000	5,043
(6)	Contingent fund and unappropriated profits	122	10,000	.....	405	722
4	Liabilities to the public	2,121,903	594,595	1,707,320	1,954,202	200,987
(1)	Deposits	1,095,621	362,311	12,177	462,104	182,152
(2)	Debentures payable in Canada	282,500	204,916	120,000	2,000	18,400
(3)	Debentures payable elsewhere	730,730	.....	1,558,063	1,472,678	.....
(4)	Interest on debentures and deposits due and accrued	13,052	4,021	14,580	17,420	435
(5)	Owing to banks	.....	22,042	.....	.....	.....
(6)	Other liabilities	.....	1,305	2,500	.....	.....
5	Total liabilities	3,708,525	1,276,195	2,443,038	3,517,607	395,136
	Assets.					
6	Secured loan assets	3,417,912	1,229,721	1,698,986	3,224,356	381,812
(1)	Real estate of—					
	General borrowers	3,417,912	1,143,062	1,258,121	3,147,130	369,293
	Directors and Officers of Company	.....	6,737	12,260	.....	3,654
(2)	Shareholders' stock	.....	11,195	49,092	77,226	5,488
(3)	Directors or Officers of the Company on their stock	.....	68,727	3,308	.....	3,377
(4)	Otherwise secured	.....	.....	376,205	.....	.....
7	Property assets	290,613	46,474	744,052	293,251	13,324
(1)	County or city securities, cash value	.....	.....	.....	116	.....
(2)	Township, town or village securities, cash value	.....	.....	1,398	2,935	.....
(3)	School section securities, cash value	.....	.....	.....	.....	.....
(4)	Loan Company debentures	.....	.....	.....	55,897	.....
(5)	Office furniture and fixtures	.....	400	.....	.....	550
(6)	Cash on hand	7,545	3,617	1,171	.....	1,863
(7)	Cash in banks	182,121	.....	94,534	161,622	7,911
(8)	Office premises	19,000	.....	.....	72,681	.....
(9)	Real estate foreclosed	20,270	42,438	.....	.....	3,000
(10)	Other property	61,677	19	*646,949	.....	.....
8	Total assets	3,708,525	1,276,195	2,443,038	3,517,607	395,136

* Company in liquidation ; this amount is to meet estimated loss in realising on assets.

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

Orangeville Building Company, Orangeville.	Ontario Loan Company, Oshawa.	Civil Service Company, Ottawa.	Metropolitan Loan Company, Ottawa.	Central Canada Company, Peterborough.	Crown Savings Company, Petrolea.	Midland Loan Company, Port Hope.	Huron and Lambton Company, Sarnia.	Lambton Loan Company, Sarnia.	No.
$	$	$	$	$	$	$	$	$	
50,000	300,000	220,000	320,000	2,000,000	1,000,000	350,000	1,000,000	1,000,000	1
25,450	300,000	66,000	320,000	1,000,000	160,900	350,000	500,000	400,000	2
21,474	371,416	76,131	366,402	588,152	110,305	330,562	374,456	527,584	3
.....	.....	.....	.....	400,000	.....	250,000	.....	.....	(1)
14,950	299,260	62,199	310,550	100,000	104,998	20,000	273,850	395,183	(2)
5,347	.....	.....	42	.....	.....	.....	50,571	.....	(3)
162	70,000	12,340	30,000	70,000	4,500	46,000	50,000	128,000	(4)
748	.....	.....	9,318	15,000	.....	9,534	.....	.....	(5)
267	2,156	1,592	16,492	3,152	807	5,028	35	4,401	(6)
69	546,150	.....	31,652	722,072	28,139	591,390	247,357	661,715	4
.....	307,205	.....	31,652	507,406	28,139	296,593	239,562	569,096	(1)
.....	210,741	.....	.....	140,500	.....	294,472	.....	76,450	(2)
.....	.....	.....	.....	11,583	.....	.....	.....	.....	(3)
.....	.....	.....	.....	3,768	.....	.....	.....	1,798	(4)
.....	28,204	.....	.....	.....	.....	.....	7,795	14,371	(5)
69	.....	.....	.....	58,815	.....	325	.....	.....	(6)
21,543	917,566	76,131	398,054	1,310,224	138,444	921,952	621,813	1,189,299	5
18,611	892,416	48,220	266,903	1,266,763	136,195	848,565	621,813	1,175,635	6
18,611	812,903	47,007	248,490	760,289	133,055	834,066	533,593	1,103,757	(1)
.....	.....	.....	.....	115,970	3,140	.....	.....	9,700	
.....	19,070	1,213	7,381	.....	.....	7,399	29,280	7,141	(2)
.....	7,760	.....	11,032	.....	.....	7,100	.....	6,155	(3)
.....	52,683	.....	.....	390,504	.....	.....	58,940	48,882	(4)
2,932	25,150	27,911	131,151	43,461	2,249	73,387	.....	13,664	7
.....	.....	.....	32,872	.....	.....	.....	.....	.....	(1)
.....	.....	.....	.....	.....	.....	.....	.....	.....	(2)
.....	.....	.....	.....	.....	.....	.....	.....	.....	(3)
.....	.....	.....	.....	.....	.....	.....	.....	.....	(4)
.....	663	.....	210	.....	70	669	.....	1,000	(5)
.....	395	.....	.....	336	.....	800	.....	4,664	(6)
2,932	92	11,691	5,835	43,125	2,179	45,953	.....	.....	(7)
.....	11,000	.....	16,116	.....	.....	.....	.....	8,000	(8)
.....	.....	16,220	76,118	.....	.....	25,055	.....	.....	(9)
.....	13,000	.....	.....	.....	.....	910	.....	.....	(10)
21,543	917,566	76,131	398,054	1,310,224	138,444	921,952	621,813	1,189,299	8

LOAN AND INVESTMENT COMPANIES.

TABLE No. II.—Statement of the affairs of Loan

No.	Schedule.	Security Loan Company, St. Catharines.	Elgin Loan Company, St. Thomas.	Southern Loan Company, St. Thomas.	South-western Farmers' Company, St. Thomas.	Star Loan Company, St. Thomas.
	Capital Stock.	$	$	$	$	$
1	Capital authorized	300,000	625,000	400,000	Unlimited	270,000
2	Capital subscribed	275,000	625,000	400,000	155,150	237,200
	Liabilities.					
3	Liabilities to stockholders	319,079	168,766	463,333	147,912	158,736
(1)	Stock fully paid up			400,000		
(2)	Stock on which has been paid	274,156	154,370		132,165	103,700
(3)	Accumulating stock				45	46,826
(4)	Reserve fund	32,000	12,000	60,000	8,500	7,000
(5)	Dividends declared and unpaid	9,595			4,595	
(6)	Contingent fund and unappropriated profits	3,328	2,396	3,333	2,607	1,210
4	Liabilities to the public	282,956	138,552	250,084	99,168	101,199
(1)	Deposits	265,820	131,723	250,084	99,168	100,048
(2)	Debentures payable in Canada	17,136				
(3)	Debentures payable elsewhere					
(4)	Interest on debentures and deposits due and accrued					
(5)	Owing to banks		6,829			
(6)	Other liabilities					1,151
5	Total liabilities	602,035	307,318	713,417	247,080	259,935
	Assets.					
6	Secured loan assets	546,225	307,318	693,243	241,984	256,013
(1)	Real estate of—					
	General borrowers	530,779	301,796	685,413	236,809	238,331
	Directors and Officers of Company		3,362			11,639
(2)	Shareholders' stock	9,143	2,160	6,030	5,175	5,593
(3)	Directors or Officers of the Company on their stock			1,800		450
(4)	Otherwise secured	6,303				
7	Property assets	55,810		20,174	5,096	3,922
(1)	County or city securities, cash value					
(2)	Township, town or village securities, cash value					
(3)	School section securities, cash value					
(4)	Loan Company debentures					
(5)	Office furniture and fixtures	75				
(6)	Cash on hand				47	
(7)	Cash in banks	24,755		14,774	5,049	3,922
(8)	Office premises					
(9)	Real estate foreclosed	30,893		5,400		
(10)	Other property	87				
8	Total assets	602,035	307,318	713,417	247,080	259,935

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

British Mortgage Company, Stratford.	Bristol and West of England Company, Toronto.	Building and Loan Company, Toronto.	Canada Landed Company, Toronto.	Canada Permanent Company, Toronto.	Dovercourt Land Company, Toronto.*	Farmers' Loan Company, Toronto.	Freehold Loan Company, Toronto.	Home Savings Company, Toronto.	No.
$	$	$	$	$	$	$	$	$	
5,000,000	2,433,333	750,000	2,000,000	3,500,000	500,000	1,057,250	2,700,000	2,000,000	1
450,000	656,655	750,000	1,500,000	3,500,000	64,500	1,057,250	2,700,000	1,500,000	2
347,956	149,122	904,853	858,492	3,732,548	79,027	739,957	1,853,028	251,477	3
126,300	.....	750,000	.....	2,000,000	.....	500,000	825,000	.....	(1)
162,737	131,035	.....	663,990	300,000	63,000	111,430	375,000	150,000	(2)
.....	.....	.....	.....	.....	.....	.....	.....	.....	(3)
48,500	4,867	95,000	150,000	1,180,000	10,000	107,127	570,000	76,000	(4)
10,099	.....	22,500	29,178	138,173	2,909	21,400	58,050	5,234	(5)
320	13,220	37,353	15,324	114,375	3,118	.....	24,978	20,243	(6)
348,302	1,072,789	825,954	1,382,181	5,822,558	50,179	796,964	3,162,963	1,626,412	4
322,442	.....	297,540	.....	1,017,088	.....	545,268	1,020,252	1,558,872	(1)
.....	.....	77,871	46,180	500,024	.....	92,085	500,090	.....	(2)
.....	1,047,256	449,645	1,324,566	4,136,117	.....	130,427	1,573,649	.....	(3)
12,934	12,078	.....	2,904	154,909	.....	29,124	68,972	51,662	(4)
12,926	.....	.....	.....	.....	.....	.....	.....	.....	(5)
.....	13,455	898	8,531	14,420	50,179	.....	.....	15,878	(6)
696,258	1,221,911	1,730,807	2,240,673	9,555,106	129,206	1,536,861	5,015,991	1,877,889	5
696,258	1,138,425	1,525,849	2,105,723	9,062,476	99,870	1,506,856	4,893,539	1,654,433	6
666,412	1,138,425	1,518,759	2,077,038	8,987,256	98,687	1,491,542	4,813,332	504,031	} (1)
22,699	.....	.....	.....	6,157	.....	8,150	.....	24,159	
7,147	.....	7,090	.....	46,653	.....	7,164	80,207	5,827	(2)
.....	.....	.....	.....	22,410	.....	.....	.....	.....	(3)
.....	.....	.....	28,685	.....	1,183	.....	.....	1,120,416	(4)
.....	83,486	204,958	134,950	492,630	29,336	30,005	122,452	223,456	7
.....	.....	.....	.....	14,355	.....	.....	.....	506	(1)
.....	.....	.....	.....	198,889	.....	.....	913	47,245	(2)
.....	.....	.....	.....	47,636	.....	.....	.....	160	(3)
.....	.....	.....	.....	.....	.....	.....	.....	.....	(4)
.....	212	.....	.....	.....	50	451	3,790	1,865	(5)
.....	47	2,039	381	609	1,561	660	969	20,490	(6)
.....	13,966	58,196	64,318	102,579	4,572	25,844	91,193	117,340	(7)
.....	.....	80,000	40,000	113,618	.....	.....	12,127	15,850	(8)
.....	988	63,313	28,083	13,001	.....	.....	.....	.....	(9)
.....	68,273	1,410	2,168	1,943	23,153	3,050	13,460	20,000	(10)
696,258	1,221,911	1,730,807	2,240,673	9,555,106	129,206	1,536,861	5,015,991	1,877,889	8

* Statement for eight months.

LOAN AND INVESTMENT COMPANIES.

TABLE No. II.—Statement of the affairs of Loan

No.	Schedule.	Imperial Loan Company, Toronto.	Land Security Company, Toronto.	London and Canadian Company, Toronto.	National Investment Company, Toronto.	North of Scotland Company, Toronto.
	Capital Stock.	$	$	$	$	$
1	Capital authorized	1,000,000	1,000,000	5,000,000	2,000,000	3,650,000
2	Capital subscribed	629,850	977,825	5,000,000	1,700,000	3,233,364
	Liabilities.					
3	Liabilities to stockholders	753,423	725,057	1,108,058	470,815	906,896
(1)	Stock fully paid up	.....	.....	.....	.....	.....
(2)	Stock on which has been paid	625,400	327,612	700,000	425,000	646,673
(3)	Accumulating stock	1,532	.....	.....	.....	.....
(4)	Reserve fund	100,000	330,000	360,000	30,000	219,000
(5)	Dividends declared and unpaid	21,953	16,047	35,000	13,042	32,334
(6)	Contingent fund and unappropriated profits	4,538	51,398	13,058	2,773	8,889
4	Liabilities to the public	970,271	529,134	3,500,823	985,017	2,472,725
(1)	Deposits	164,399	129,556	.....	.....	.....
(2)	Debentures payable in Canada	144,159	282,150	35,000	109,939	.....
(3)	Debentures payable elsewhere	636,314	.....	3,350,636	863,230	2,466,782
(4)	Interest on debentures and deposits due and accrued	16,277	4,792	27,014	8,302	.....
(5)	Owing to banks	9,122	.....	.....	.....	.....
(6)	Other liabilities	.....	112,636	88,173	3,546	5,943
5	Total liabilities	1,723,694	1,254,191	4,608,881	1,455,832	3,379,621
	Assets.					
6	Secured loan assets	1,690,064	553,768	3,937,404	1,338,843	3,066,121
(1)	Real estate of—					
	General borrowers	1,678,764	553,768	3,803,046	1,329,211	3,065,135
	Directors and Officers of Company	.....	.....	.....	8,114	.....
(2)	Shareholders' stock	10,300	.....	.....	.....	.....
(3)	Directors or Officers of the Company on their stock	1,000	.....	.....	.....	.....
(4)	Otherwise secured	.....	.....	134,358	1,518	986
7	Property assets	33,630	700,423	671,477	116,989	313,500
(1)	County or city securities, cash value	.....	.....	185,836	.....	
(2)	Township, town or village securities, cash value	1,445	.....	193,139	.....	206,217
(3)	School section securities, cash value	.....	.....	53,161	.....	
(4)	Loan Company debentures	.....	.....	.....	.....	
(5)	Office furniture and fixtures	800	.....	3,464	.....	1,706
(6)	Cash on hand	473	.....	.....	315	39
(7)	Cash in banks	30,912	37,342	12,573	52,122	14,689
(8)	Office premises	.....	26,000	.....	.....	60,833
(9)	Real estate foreclosed	.....	.....	146,506	64,552	30,016
(10)	Other property	.....	637,081	76,798	.....	.....
8	Total assets	1,723,694	1,254,191	4,608,881	1,455,832	3,379,621

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

Ontario Industrial Company, Toronto.	People's Loan Company, Toronto.	Real Estate Loan Company, Toronto.	Toronto Land Company, Toronto.	Trust and Loan Company, Toronto.	Union Loan Company, Toronto.	Western Canada Company, Toronto.	Oxford Permanent Company, Woodstock.	Totals.	No.
$	$	$	$	$	$	$	$	$	
500,000	600,000	2,000,000	1,000,000	14,600,000	1,000,000	3,000,000	Unlimited	79,575,583	1
466,800	600,000	756,700	59,200	7,300,000	982,800	3,000,000	230,350	56,114,310	2
409,109	719,609	487,491	61,877	2,365,913	915,060	2,267,409	263,315	35,910,563	3
58,000	.....	.....	.....	.....	581,711	1,000,000	225,100	11,342,861	(1)
251,057	580,350	400,650	42,759	1,581,667	76,335	400,000	2,305	15,429,167	(2)
.....	9,042	70,110	.....	.....	.....	.....	.....	222,602	(3)
80,000	100,000	.....	1,015	712,516	210,000	700,000	19,000	7,254,105	(4)
10,816	20,429	147	.....	47,450	25,588	66,157	8,466	885,736	(5)
9,236	9,788	16,584	18,103	24,280	21,426	101,252	8,444	776,092	(6)
223,546	574,018	.....	28,949	3,654,697	830,722	3,934,664	104,646	51,177,104	4
104,197	484,803	.....	.....	.....	480,321	1,292,808	91,792	17,533,413	(1)
.....	87,600	.....	1,550	.....	171,675	645,972	.....	5,500,622	(2)
.....	.....	.....	.....	3,583,488	178,726	1,954,771	.....	26,722,070	(3)
2,581	1,193	.....	580	.....	.....	40,260	.....	587,484	(4)
.....	.....	.....	1,200	.....	.....	.....	12,854	155,326	(5)
116,768	422	.....	25,619	71,209	.....	853	.....	678,189	(6)
632,655	1,293,627	487,491	90,826	6,020,610	1,745,782	6,202,073	367,961	87,087,667	5
171,988	1,210,805	283,550	61,081	4,930,211	1,649,860	5,825,395	344,152	79,035,804	6
144,677	1,199,166	275,837	61,081	4,554,475	1,608,554	5,759,970	334,035	74,954,076	(1)
.....	.....	.....	.....	.....	.....	.....	.....	252,957	
16,348	11,456	4,375	.....	.....	40,306	60,339	9,844	852,267	(2)
.....	.....	.....	.....	.....	1,000	4,616	.....	177,465	(3)
10,963	183	3,338	.....	375,736	.....	470	273	2,799,039	(4)
460,667	82,822	203,941	29,745	1,090,399	95,922	376,678	23,809	8,051,863	7
.....	.....	.....	.....	.....	.....	.....	.....		(1)
.....	.....	.....	.....	.....	.....	.....	.....	1,153,165	(2)
.....	.....	.....	.....	.....	.....	.....	.....		(3)
.....	.....	.....	.....	.....	.....	.....	.....		(4)
.....	684	325	.....	1,322	1,226	1,690	276	27,372	(5)
54	1,500	358	67	1,703	152	241	779	74,053	(6)
16,201	57,340	23,549	3,487	55,568	32,855	273,471	196	2,127,308	(7)
.....	.....	.....	.....	61,000	60,000	18,206	7,762	751,971	(8)
.....	23,298	179,709	.....	192,702	.....	83,070	14,331	1,091,961	(9)
444,412	.....	.....	26,191	778,104	1,689	.....	465	2,826,033	(10)
632,655	1,293,627	487,491	90,826	6,020,610	1,745,782	6,202,073	367,961	87,087,667	8

LOAN AND INVESTMENT COMPANIES.

TABLE No. III.—Statement of the Affairs of Loan and Investment Companies in the Province of Ontario as

No.	Miscellaneous.	Hastings Loan Company, Belleville.	Royal Loan Company, Brantford.	Chatham Loan Company, Chatham.	Huron and Bruce Loan Company, Goderich.	Guelph and Ontario Loan Company, Guelph.
1	Dividend declared at.....p.c.	7.	8.	7.	6.	7.
2	Dividend paid.....$	12,331	36,134	4,472	6,556	20,893
3	Loaned during year.....$	71,312	200,638	74,257	57,054	337,054
4	Received from borrowers—					
	Principal.....$	54,011	173,747	50,478	3,300	260,698
	Interest.....$	19,305	77,778	14,006	6,137	
5	Received from depositors.....$	179,874	920,275	353,271	150,098	599,592
6	Repaid depositors.....$	170,392	958,388	343,817	90,293	620,321
7	Debentures issued.....$	.....	91,916	.....	.....	377,441
8	Debentures repaid.....$	.....	43,488	.....	.....	240,975
9	Debentures to mature within one year.....$	.....	92,740	.....	.....	336,782
10	Average rate of interest—					
	For debentures.....p.c.	.....	4.93	.....	.....	5.00
	For deposits.....p.c.	4.25	4.00	4.25	4.00	4.16
11	Interest paid and accrued—					
	On debentures.....$	.....	7,910	.....	.....	21,760
	On deposits.....$	5,102	17,117	7,118	1,554	13,126
12	Cost of management*.....$	2,971	5,941	3,433	1,198	6,148
13	Borrowed for investment.....$	133,382	.....	.....	.....	782,056
14	Invested and secured by mortgage—					
	In Ontario.....$	305,826	1,124,367	225,455	155,191	1,125,863
	Elsewhere.....	.....	.....	.....	.....	.....
15	Mortgages by instalments.....$	4,979	37,599	41,358	.....	182,100
16	Mortgages at stated period.....$	300,847	1,086,768	184,097	155,191	943,763
17	Average rate of interest on total amount secured by mortgages.....p.c.	7.	6.66	7.20	6.50	6.66
18	Average rate of interest on amount loaned on mortgages in year.....p.c.	6.25	6.37	7.	6.50	6.20
19	Cash value of all investments.....$	377,406	1,138,299	226,035	170,992	1,183,304
20	Number of mortgages on which proceedings have been taken.....$	1	15	2	.....	2
21	Amount of mortgages on which proceedings have been taken.....$	7,500	43,168	6,900	.....	7,155
22	Value of mortgaged property held for sale.$	7,000	10,000	2,500	.....	.....
23	Amount chargeable against such property..$	6,000	8,680	2,400	.....	.....

* Cost of management includes commission, agency, etc.

LOAN AND INVESTMENT COMPANIES.

required to be furnished by Chapter 169, Section 83, *et seq.*, R.S.O., 1887, or by provisions of Special Charters.

Hamilton Provident Company, Hamilton.	Homestead Loan Company, Hamilton.	Landed Banking Company, Hamilton.	Frontenac Loan Company, Kingston.	Ontario Building Company, Kingston.	Agricultural Savings Company, London.	Canadian Savings Company, London.	Dominion Savings Company, London.	Empire Loan Company, London.	No.
7.	.....	6.	6.	6.	7.	7.50	6.50	6.	1
77,000	.....	32,176	12,000	15,000	43,131	50,766	60,400	5,343	2
816,136	23,584	324,486	56,076	138,130	303,557	300,418	458,215	81,092	3
									4
801,290	{ ..... 4,422 }	288,457	96,100	121,038	426,015	351,373	618,187	{ 33,222 12,324	
1,289,201	* 15,615	1,296,303	335,883	319,458	919,576	1,087,302	1,415,457	204,746	5
1,197,133	* 8,805	1,214,851	328,735	318,693	958,370	1,082,936	1,551,050	183,297	6
162,505	.....	77,250	.....	.....	97,980	66,986	119,018	.....	7
89,132	.....	80,300	.....	.....	78,600	25,986	25,307	.....	8
321,986	.....	62,700	.....	.....	81,465	18,486	64,477	.....	9
									10
4.79	.....	5.28	.....	.....	4.90	4.98	5.00	.....	
3.93	.....	4.47	3.16	3.16	4.21	4.32	4.50	4.50	
									11
42,850	.....	13,066	.....	.....	13,514	7,777	38,639	.....	
40,710	.....	20,021	7,276	4,809	26,240	29,861	15,382	4,177	
30,109	1,309	11,852	3,961	2,760	10,288	8,293	14,092	2,597	12
2,061,929	.....	.....	260,981	.....	852,954	.....	1,086,432	.....	13
									14
2,992,608	82,467	1,193,390	228,779	372,990	1,517,279	1,578,988	2,028,772	158,630	
148,850	.....	165,059	147,120	.....	.....	.....	.....	.....	
2,199,338	82,467	669,425	351,949	149,696	55,843	31,213	762,454	64,710	15
942,120	.....	689,024	23,950	223,294	1,461,436	1,547,775	1,266,318	93,920	16
									17
6.94	6.00	7.03	7.25	6.56	6.73	6.70	6.25	7.00	
									18
6.34	6.00	6.67	6.10	5.83	6.27	6.29	6.50	6.50	
3,516,852	82,467	1,366,797	496,702	443,895	1,541,067	1,708,077	2,139,098	206,822	19
									20
47	.....	7	12	1	8	6	22	1	
									21
99,666	.....	25,872	76,267	6,420	19,832	11,699	45,506	3,201	
69,900	135,000	37,190	.....	8,300	20,926	7,620	121,920	.....	22
45,583	.....	32,374	84,017	9,872	20,926	6,133	129,550	.....	23

* Members.

LOAN AND INVESTMENT COMPANIES.

TABLE No. III.—Statement of the affairs of Loan

No.	Miscellaneous.	Huron and Erie Company, London.	London Loan Company, London.	* Ontario Investment Company, London.	Ontario Loan Company, London.	Royal Standard Company, London.
1	Dividend declared at.....p.c.	7.	7.	8.	7.	6.
2	Dividend paid.....$	99,000	42,838	28,798	84,000	10,081
3	Loaned during year .....$	540,713	218,814	412,346	618,381	71,466
4	Received from borrowers—					
	Principal.....$	} 649,327	{ 297,599	} 723,461	799,569	{ 57,196
	Interest.....$		{ 95,752			{ 25,035
5	Received from depositors.....$	1,338,608	1,038,240	215,132	652,549	315,815
6	Repaid depositors.....$	1,364,008	1,039,440	359,492	617,939	299,971
7	Debentures issued.....$	312,512	167,416	362,257	65,753	16,400
8	Debentures repaid.....$	53,230	283,700	351,790	67,890	18,000
9	Debentures to mature within one year.....$	39,693	56,840	393,020	226,300	3,000
10	Average rate of interest—					
	For debentures.....p.c.	4.67	5.44	4.85	4.83	5.00
	For deposits.....p.c.	4.00	4.89	4.50	4.14	4.33
11	Interest paid and accrued—					
	On debentures.....$	38,761	13,394	83,591	70,573	593
	On deposits.....$	44,351	19,196	5,360	19,550	7,768
12	Cost of management.....$	18,647	4,558	15,267	19,734	2,440
13	Borrowed for investment.....$	2,108,851	567,227	1,690,240	1,936,781	200,552
14	Invested and secured by mortgage—					
	In Ontario.....$	3,417,912	1,192,236	1,346,489	3,147,130	372,946
	Elsewhere.....$	.....	.....	18,412	.....	.....
15	Mortgages by instalments.....$	144,147	588,819	.....	1,643,633	5,090
16	Mortgages at stated period.....$	3,273,765	603,417	1,364,901	1,503,497	367,856
17	Average rate of interest on total amount secured by mortgages.....p.c.	6.77	7.00	6.75	6.60	7.00
18	Average rate of interest on amount loaned on mortgages in year.....p.c.	6.15	7.00	6.25	6.34	6.25
19	Cash value of all investments.....$	3,499,859	1,276,194	1,700,385	3,283,304	395,135
20	Number of mortgages on which proceedings have been taken	13	47	.....	11	.....
21	Amount of mortgages on which proceedings have been taken .....$	42,099	106,948	.....	53,766	.....
22	Value of mortgaged property held for sale..$	20,270	42,000	94,519	34,600	3,000
23	Amount chargeable against such property..$	20,270	42,438	94,519	28,393	3,000

* In liquidation.

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

Orangeville Building Company, Orangeville.	Ontario Loan Company, Oshawa.	Civil Service Company, Ottawa.	Metropolitan Loan Company, Ottawa.	Central Canada Company, Peterborough.	Crown Savings Company, Petrolea.	Midland Loan Company, Port Hope.	Huron and Lambton Company, Sarnia.	Lambton Loan Company, Sarnia.	No.
5.	7.	6.	6.	6.	7.	7.	7.	8.	1
1,015	20,914	3,731	18,635	30,000	6,881	18,485	22,425	31,415	2
705	114,518	2,359	34,364	317,401	18,005	171,591	131,657	265,744	3
									4
1,339	161,710	.....	49,035	436,272	17,245	58,228	90,032	} 236,298	
1,001	46,672	.....	21,170	71,272	7,600	55,295	37,248		
.....	325,312	.....	75,939	441,406	34,593	422,868	338,243	641,092	5
.....	427,898	.....	86,748	424,839	42,445	353,189	341,529	590,342	6
.....	57,675	.....	.....	60,000	.....	202,966	.....	19,200	7
.....	40,125	.....	.....	135,000	.....	230,176	.....	9,300	8
.....	2,200	.....	.....	.....	.....	217,817	.....	13,150	9
									10
.....	5.00	.....	.....	5.00	.....	4.50	.....	4.75	
.....	4.13	.....	3.50	4.50	4.50	4.00	4.50	3.50	
									11
.....	9,650	.....	.....	14,653	.....	13,857	.....	3,501	
.....	11,526	.....	1,283	22,581	1,154	9,637	10,886	20,180	
112	5,611	939	2,535	3,159	630	5,606	3,491	4,661	12
.....	546,149	.....	.....	659,488	.....	.....	.....	645,546	13
									14
18,611	812,903	63,226	248,490	869,830	128,520	834,066	533,493	1,113,457	
.....	.....	.....	.....	6,429	.....	.....	.....	.....	
12,461	360,496	31,404	.....	.....	62,195	47,385	.....	.....	15
6,150	452,407	31,822	248,490	876,259	66,325	786,681	533,593	1,113,457	16
									17
7.00	6.50	8.00	8.00	6.59	7.25	6.50	7.00	6.75	
									18
7.00	6.50	7.00	6.50	6.43	7.50	6.25	6.75	6.25	
18,611	917,565	64,439	398,054	1,310,224	136,195	848,565	621,813	1,175,635	19
									20
1	3	.....	.....	2	1	3	5	7	
									21
408	12,400	.....	.....	1,200	600	8,950	6,000	4,037	
.....	40,000	16,220	100,000	.....	.....	25,055	.....	6,000	22
.....	34,000	16,220	76,119	.....	.....	25,055	.....	4,000	23

LOAN AND INVESTMENT COMPANIES.

TABLE No. III.—Statement of the affairs of Loan

No.	Miscellaneous.	Security Loan Company, St. Catharines.	Elgin Loan Company, St. Thomas.	Southern Loan Company, St. Thomas.	South-Western Farmers' Company, St. Thomas.	Star Loan Company, St. Thomas.
1	Dividend declared at .....p.c.	7.	6.	7.	7.	6.
2	Dividend paid..... .....$	19,191	9,048	27,958	8,806	8,657
3	Loaned during year.....$	190,876	68,283	94,062	48,638	65,543
4	Received from borrowers—					
	Principal .....$	125,094	24,492	111,677	43,650	57,162
	Interest.....$		16,192	40,746		17,972
5	Received from depositors.....$	308,263	224,702	315,408	111,974	123,238
6	Repaid depositors .....$	249,192	222,670	315,486	109,766	127,609
7	Debentures issued .....$	7,000	.....	.....	.....	.....
8	Debentures repaid.....$	14,723	.....	.....	.....	.....
9	Debentures to mature within one year .....$	9,800	.....	.....	.....	.....
10	Average rate of interest—					
	For debentures.....p.c.	4.50	.....	.....	.....	.....
	For deposits ....p.c.	4.00	3.75	4.00	4.00	4.28
11	Interest paid and accrued—					
	On debentures.....$	953	.....	.....	.....	17
	On deposits .....$	9,326	5,248	10,295	....	4,265
12	Cost of management .....$	4,278	1,976	4,242	2,092	2,184
13	Borrowed for investment.....$	316,216	131,723	.....	.....	.....
14	Invested and secured by mortgage—					
	In Ontario .....$	561,672	305,158	685,413	236,809	256,013
	Elsewhere .....$	.....	.....	.....	.....	.....
15	Mortgages by instalments.....$	371,081	226,233	430,700	145,619	.....
16	Mortgages at stated period..... .....$	190,591	78,925	254,713	91,190	256,013
17	Average rate of interest on total amount secured by mortgages.....p.c.	6.26	6.50	6.50	7.00	6.64
18	Average rate of interest on amount loaned on mortgages in year .....p.c.	6.75	6.50	6.25	6.50	6.50
19	Cash value of all investments..... ...$	577,118	307,318	698,642	241,984	259,935
20	Number of mortgages on which proceedings have been taken	....	3	13	1	4
21	Amount of mortgages on which proceedings have been taken ....$	.....	15,500	12,621	4,500	4,675
22	Value of mortgaged property held for sale..$	30,893	5,900	5,400	800	.....
23	Amount chargeable against such property..$	30,893	5,190	5,400	.....	.....

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

British Mortgage Company, Stratford.	Bristol and West of England Company, Toronto.	Building and Loan Company, Toronto.	Canada Landed Company, Toronto.	Canada Permanent Company, Toronto.	Dovercourt Land Company, Toronto.	Farmers' Loan Company, Toronto.	Freehold Loan Company, Toronto.	Home Savings Company, Toronto.	No.
7.	8.	6.	8.	12.	7.	7.	10.	7.	1
19,337	10,483	45,000	53,119	276,000	2,909	42,800	106,082	9,899	2
253,495	258,202	263,431	294,325	1,416,069	.....	368,263	1,289,036	1,222,707	3
247,629	198,567 75,134	335,358	231,728 137,804	1,872,807	.....	224,746 75,644	847,800	1,113,072 72,230	4
503,863	....	847,173	.....	356,040	.....	468,639	789,880	3,441,964	5
469,244	.....	845,873	.....	448,078	.....	422,539	797,084	3,325,201	6
.....	81,560	67,923	313,385	543,605	.....	104,687	643,231	.....	7
.....	54,688	31,647	264,712	225,343	.....	7,822	232,707	.....	8
.....	250,147	77,787	295,441	671,807	.....	3,707	199,133	.....	9
....	4.54	4.95	4.72	4.39	.....	5.33	4.83	.. ..	10
4.00	.....	3.47	.....	3.93	....	4.25	3.90	4.00	
.....	47,229	24,816	69,532	196,190	.....	24,081	93,239	.....	11
12,934	....	9,299	.....	45,820	.....	5,043	43,075	55,395	
4,690	18,200	13,246	17,149	71,152	1,222	10,940	42,352	15,448	12
348,302	1,047,256	825,056	1,370,746	5,653,228	.....	767,779	3,162,963	1,610,534	13
686,611	1,138,425	1,244,566	1,618,276	7,846,304	98,687	1,487,692	3,715,833	528,189	14
....	....	281,283	486,846	1,147,109	.....	12,000	1,097,499	....	
2,762	307,485	116,576	685,027	7,191,096	98,687	664,083	4,813,332	149,541	15
683,849	830,940	1,409,273	1,420,095	1,802,317	.....	835,609	.....	378,648	16
6.48	7.12	6.64	7.00	6.85	7.00	7.00	7.25	6.13	17
6.50	7.08	6.75	6.87	6.86	7.00	6.50	7.00	6.13	18
696,258	1,221,911	1,730,807	2,133,807	9,555,106	129,206	1,506,856	5,015,991	1,857,889	19
6	1	4	25	115	.....	6	28	1	20
14,120	1,000	6,086	32,584	176,802	..... .	22,370	141,752	2,324	21
2,500	37,700	63,313	71,580	594,770	.....	64,272	241,837	.....	22
2,500	30,135	63,313	88,585	429,337	.....	49,126	246,744	....	23

LOAN AND INVESTMENT COMPANIES.

TABLE No. III.—Statement of the affairs of Loan

No.	Miscellaneous.	Imperial Loan Company, Toronto.	Land Security Company, Toronto.	London and Canadian Company, Toronto.	National Investment Company, Toronto.	North of Scotland Company, Toronto.
1	Dividend declared at .....p.c.	7.	10.	10.	6.	10.
2	Dividend paid. .....$	43,825	30,630	63,000	25,500	64,667
3	Loaned during year.....$	661,421	354,049	774,782	274,303	481,203
4	Received from borrowers—					
	Principal.....$	380,327	145,311	575,848	219,421	562,775
	Interest.....$	101,952	35,747	250,915	88,119	186,218
5	Received from depositors.....$	330,703	139,805	.....	.....	.....
6	Repaid depositors .....$	297,473	121,764	.....	.....	.....
7	Debentures issued.....$	221,690	278,850	277,680	193,929	878,365
8	Debentures repaid.....$	15,087	205,000	238,861	125,495	829,820
9	Debentures to mature within one year.....$	38,823	98,200	477,120	169,200	574,447
10	Average rate of interest—					
	For debentures.....p.c.	4.75	5.44	4.74	4.81	4.33
	For deposits.....p.c.	4.50	5.00	.....	.....	.....
11	Interest paid and accrued—					
	On debentures.....$	45,881	11,376	160,131	45,390	106,248
	On deposits.....$	6,419	5,351	.....	.....	.....
12	Cost of management .....$	15,695	13,231	45,724	14,598	47,995
13	Borrowed for investment.....$	944,872	407,120	3,385,636	973,169	2,466,782
14	Invested and secured by mortgage—					
	In Ontario.....$	1,578,764	596,026	3,803,046	926,797	3,065,135
	Elsewhere.....$	100,000	.....		339,501	
15	Mortgages by instalments. .....$	300,644	128,081	.....	55,583	.....
16	Mortgages at stated period.....$	1,378,120	467,945	3,803,046	1,210,715	3,065,135
17	Average rate of interest on total amount secured by mortgages. .....p.c.	6.75	7.50	6.83	7.13	6.97
18	Average rate of interest on amount loaned on mortgages in year.....p.c.	6.50	7.00	6.50	6.55	6.50
19	Cash value of all investments.....$	1,723,694	553,768	4,608,881	1,455,832	3,379,621
20	Number of mortgages on which proceedings have been taken.....	4	.....	43	10	15
21	Amount of mortgages on which proceedings have been taken .....$	14,000	.....	50.190	12,750	24,298
22	Value of mortgaged property held for sale..$	10,700	12,000	72,063	64,552	30,016
23	Amount chargeable against such property..$	8,700	10,081	72.063	64,552	30,016

LOAN AND INVESTMENT COMPANIES.

and Investment Companies, etc.—*Continued.*

Ontario Industrial Company, Toronto.	People's Loan Company, Toronto.	Real Estate Loan Company, Toronto.	Toronto Land Company, Toronto.	Trust and Loan Company, Toronto.	Union Loan Company, Toronto.	Western Canada Company, Toronto.	Oxford Permanent Company, Woodstock.	Totals.	No.
7.	7.	.....	7.	6.	8.	10.	7.	.....	1
21,260	40,777	.....	2,815	94,900	51,009	133,199	15,916	2,021,207	2
75,948	248,628	7,484	42,107	641,985	429,371	1,105,339	72,789	17,162,412	3
									4
50,183	} 339,406	{ 33,923	16,546	600,899	} 424,904	1,339,257	{ 53,260	}18,987,927	
10,472		{ 16,061	3,411	302,445			{ 30,779		
118,461	937,884	.....	.....	.....	524,814	676,970	136,842	25,283,071	5
102,074	1,037,787	26,315	.....	.....	548,759	689,246	152,360	25,283,441	6
.....	50,300	.....	.....	25,355	106,454	212,595	.....	6,263,884	7
.....	6,000	.....	.....	148,190	32,060	141,140	.....	4,346,294	8
.....	11,700	.....	.....	333,756	66,723	569,532	.....	5,777,979	9
									10
.....	5.20	.....	.....	4.48	4.75	4.70	.....	.....	
5.28	4.44	4.00	.....	.....	4.19	4.00	4.00	.....	
									11
.....	2,635	.....	109	194,030	15,064	121,611	.....	1,552,621	
8,814	24,033	891	.....	.....	18,285	50,111	4,566	685,138	
5,965	6,982	4,650	3,364	63,226	11,729	49,066	2,167	685,905	12
223,407	.....	.....	.....	3,583,488	631,269	3,893,550	12,854	45,288,518	13
									14
144,677	1,222,464	20,947	.....	2,461,656	1,608,554	4,722,791	348,366	}75,433,882	
.....	.....	254,890	.....	2,092,819	.....	1,037,180	.....		
.....	76,148	.....	.....	.....	608,554	5,759,971	31,627	29,691,591	15
144,677	1,146,316	275,837	.....	4,554,475	1,000,000	.....	316,739	45,742,291	16
									17
6.75	7.50	8.00	7.00	6.60	7.50	6.97	7.75	.....	
									18
6.00	7.00	8.00	7.00	6.00	7.00	6.39	6.50	.....	
616,400	1,234,103	cannot say	91,260	6,020,610	1,649,860	6,202,073	367,961	84,080,682	19
									20
.....	5	" "	.....	40	15	131	1	688	
									21
.....	24,583	" "	.....	53,250	32,415	182,398	1,200	1,419,012	
.....	25,000	" "	.....	45,700	73,695	271,746	14,331	2,540,788	22
.....	23,298	" "	.....	47,923	73,695	205,034	14,331	2,190,465	23

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO,

1887.

PART VI.—MISCELLANEOUS STATISTICS.

Printed by Order of the Legislative Assembly

TORONTO:
PRINTED BY WARWICK & SONS, 68 & 70 FRONT STREET WEST.
1888.

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SIXTH ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES.

PART VI.

To the Honorable Charles Drury, Ministrr of Agriculture:

Sir,—I have the honor to submit herewith Miscellaneous Statistics of the Province of Ontario and the Dominion of Canada, being Part vi of the Report of the Bureau of Industries for 1887.

Your obedient servant,

A. BLUE, Secretary.

PART VI.

SCHOOLS, INTERNATIONAL TRADE, ETC.

MISCELLANEOUS STATISTICS.

This part of the report of the Bureau aims to show the growth and expansion of the country as illustrated by statistics of schools, public lands, international commerce, etc. It was intended to have included summaries of the municipal statistics of the province for the years 1886 and 1887, but owing to the neglect of officers of some municipalities to make the returns required by statute, and to the difficulty in many cases of procuring correct statements, these statistics must be deferred to the next report.

Schools.—Tables I and II present information in regard to Ontario schools. The first table gives statistics in detail for each of the three divisions of the system—High, Public and Separate schools—and the second table gives a summary of the whole. The first dates back to 1842, but it was not till 1854 that school returns were required of the fulness and detail that has prevailed since that time. The statistics show that there was during 1886 a considerable extension of the operations of the Ontario school system. The number of children in the province between the ages of 5 and 21 years, which is the range of child enumeration as prescribed by the amended Act, was 18,057 greater than in the previous year. There was an increase of 16,132 in the number of pupils on the rolls, and the total average attendance was 13,727 greater than in 1885. The average attendance was 49 per cent. of the total number enrolled, against 48 per cent. for the preceding year. Of the increased attendance the Public schools, of course, receive the largest share, the increase in average attendance for this class of schools alone being 12,426. The total number of teachers was greater by 159, of which 138 were required in the Public schools, and the total amount of salaries paid was increased by $71,853. There was an average increase of $8 in salaries to High school teachers, of $2 to Public school teachers, and of $1 to teachers in Separate schools. The total sum expended for school purposes in 1886 was $3,935,195, being $193,033 more than in the preceding year.

Public Lands and Timber Limits.—Table III presents a statement of the sales of public lands and timber limits within the province for the calendar year 1887, and for each year since Confederation. During 1887 there were 69,797 acres of public lands disposed of, comprising Crown, Clergy, Common School and Grammar School lands. There were 11,428 acres more sold in 1887 than in the preceding year, but the area sold was under the average for the twenty years. The average value of the sales for 1887 was $1.14 per acre, which, though greater than that for any year since 1877, is still slightly less than the average for the whole period. The area covered by timber licenses at the end of the year was 15,850 square miles, and the amount of revenue accrued from timber dues, ground rent, etc., was $1,019,517.

Imports and Exports of the Dominion.—Table IV contains a statement compiled from the Dominion blue book of our foreign trade in grain and breadstuffs, showing by quantities for certain periods the imports and exports of all the principal articles of grain, flour and meal between Canada and all countries. The table also presents for the same periods the volume of exports not the produce of Canada, the net surplus or deficit, and the value of the total exports both of home and foreign produce

The figures are given in varying form for each of the fifteen fiscal years ending June 30, 1887. Wheat and Indian corn are the only two articles for which statistics are given distinct from other products for that length of time, in the Dominion returns ; all other products are grouped together for a portion of the period, but are tabulated separately during the later years. The same order of tabulation has necessarily to be observed in this table. There was a considerably larger movement, both in and out, in wheat and flour during 1887 than during the preceding year, the result of which was that in these two articles the balance of trade in our favor was increased by the equivalent of 2,988,324 bushels. Naturally, our trade in Indian corn and corn meal is almost wholly confined to the imported article, a very small proportion of the export appearing as of the produce of Canada. Of barley, oats, pease, rye, beans and oatmeal, our exports are in excess of our imports, and the three first named, with wheat and flour added, represent 90 per cent. of the value of our total exports of produce of the field. An examination of the figures for 1887 will show that, as compared with the preceding year, the only important falling off in the column of balances occurs in regard to oats. A comparison again with the statement of yearly averages extending over a number of years shows that, except in the case of the unimportant items of rye and oatmeal, the net surpluses for 1887 are larger and the deficits smaller in every instance.

Table v contains a statement in detail for each of the fiscal years 1881-7 of the quantities and values of all exports, the growth and produce of Canada, together with the average of the declared value per unit of each article. The following table gives a summary of the same for each year since Confederation, showing simply the total yearly value of each class of merchandise exported, the total of all classes, and a yearly average for the twenty years' period :

Year.	Produce of the Mine.	Produce of the Fisheries.	Produce of the Forest.	Animals and their Produce.	Agricultural Products.	Manufactures.	Miscellaneous Articles.	Totals.
	$	$	$	$	$	$	$	$
1868...	1,276,129	3,357,510	18,742,625	6,893,167	12,871,055	2,100,411	302,280	45,543,177
1869...	1,941,485	3,242,710	20,423,882	8,769,407	12,182,702	2,412,559	350,559	49,323,304
1870...	2,192,541	3,608,549	21,533,300	12,138,161	13,676,619	2,560,370	371,652	56,081,192
1871...	2,841,124	3,994,275	23,063,148	12,582,925	9,853,146	2,428,875	387,554	55,151,047
1872...	3,389,984	4,348,508	24,245,500	12,416,613	13,378,562	2,708,203	513,066	61,000,436
1873...	5,853,860	4,779,277	29,298,917	14,243,017	14,995,340	3,609,903	465,292	73,245,606
1874...	3,760,835	5,292,368	27,237,779	14,679,169	19,590,142	2,946,655	419,800	73,926,748
1875...	3,643,398	5,380,527	25,070,410	12,700,507	17,258,358	3,028,512	409,181	67,490,893
1876...	3,731,827	5,500,989	20,333,230	13,614,569	21,139,665	5,148,201	393,368	69,861,849
1877...	3,644,040	5,874,360	23,010,249	14,220,617	14,689,376	4,105,422	320,816	65,864,880
1878...	2,816,347	6,853,975	19,511,575	14,019,857	18,008,754	4,127,755	401,871	65,740,134
1879...	3,082,900	6,928,871	13,261,459	14,100,604	19,628,464	2,700,281	386,999	60,089,578
1880...	2,877,351	6,579,656	16,854,507	17,607,577	22,294,328	3,242,617	640,155	70,096,191
1881...	2,767,829	6,867,715	24,960,012	21,360,219	21,269,527	3,075,095	622,182	80,922,579
1882...	3,013,573	7,682,079	23,991,055	20,518,662	31,035,712	3,329,598	535,935	90,106,614
1883...	2,970,886	8,809,118	25,370,726	20,284,343	22,818,519	3,503,220	528,895	84,285,707
1884...	3,247,092	8,591,654	25,811,157	22,946,108	12,397,843	3,577,535	560,690	77,132,079
1885...	3,639,537	7,960,001	20,989,708	25,337,104	14,518,293	3,181,501	557,374	76,183,518
1886...	3,951,147	6,843,388	21,034,611	22,065,433	17,652,779	2,824,137	604,011	74,975,506
1887...	3,805,959	6,875,810	20,484,746	24,246,937	18,826,235	3,079,972	644,361	77,964,020
Yearly average.	3,222,392	5,968,567	22,261,430	16,237,250	17,404,271	3,184,541	470,802	68,749,253

The total value of the exports for 1887 is greater by $2,988,514 than for the previous year. The value of the exports of fish products, animals, agricultural produce, manufactures and miscellaneous articles, shows an increase in each instance, notably in animals and agricultural produce, the exports of which together exceed in value those of 1886 by $3,354,960. This is offset by smaller exports of products of the mine and of the forest to the extent of $695,053. During late years the proportion borne by the combined export value of animals and agricultural produce has increased somewhat, and for 1887 it forms 55 per cent. of our total exports. These two classes, with products of the forest, represent 81 per cent. of the value of the exports of 1887.

Comparative tables have been prepared from the trade returns of the Dominion, showing the export movement from Canada in regard to three classes of articles, the production of which Ontario is largely interested in developing, viz., minerals, animals and their products, and agricultural produce. These tables give in detail, for each of the fiscal years 1886-7, the quantity, aggregate value, and the value per unit of the various products therein enumerated. A yearly average of quantities and values is also presented in each case for the period of twenty years, 1868-87, wherever the figures were obtainable for that length of time, and otherwise for shorter periods. Compared with the figures for 1886, the exports from Canada for the past year under these three heads show an increase in value of $3,209,772. The exported value of products of the mine fell off by $145,188 during the year, while, as has already been pointed out, that of animals and agricultural products was largely augmented.

The following table, prepared on the lines indicated above, relates to the exports of Canadian mines:

Articles.	1887.			1886.			Yearly average 1868-87.		
	Quantity.	Value.		Quantity.	Value.		Quantity.	Value.	
		Total.	Per unit.		Total.	Per unit.		Total.	Per unit.
		$	$ c.		$	$ c.		$	$ c.
Coal.....tons.	527,004	1,522,272	2 89	493,508	1,416,160	2 87	373,436	1,017,972	2 73
Gold quartz, dust, etc...	....	1,017,401	.....	.....	1,210,864	.....	.....	835,611	.....
Gypsum, crude....tons.	148,533	166,514	1 12	107,237	114,736	1 07	.....	76,446	.....
Oils, mineral, etc .gals.	310,667	11,151	04	260,449	30,957	12	1,822,919	335,290	18
Ore:									
Antimony .....tons.	214	12,110	56 59	903	38,320	42 44	.....	5,891	....
Copper .... "	5,267	181,545	34 47	5,224	291,397	55 78	6,418	200,920	31 31
Iron ..... "	23,387	71,944	3 08	7,524	23,039	3 05	28,546	69,230	2 43
Manganese..... "	1,586	60,162	37 93	2,074	45,608	21 99	.....	22,620	.....
Silver..... "	40	24,937	623 43	81	25,137	310 33	.....	282,250	.....
Phosphates..... "	22,803	396,449	17 39	25,974	431,951	16 63	8,005	145,734	18 21
Salt.....bush.	106,643	9,463	09	384,493	26,749	07	337,794	38,298	11
Sand and gravel...tons.	135,627	23,207	17	102,795	23,195	23	.....	116,921	.....
Stone, unwrought.. "	12,205	65,601	5 37	15,259	61,950	4 06			
Other articles	.....	243,203	.....	.....	211,084	.....	.....	75,209	.....

Yearly average export.	Quantity.	Value.	Value per unit.
Gypsum (11 years)	124,565 tons.	$121,487	$0.98
Phosphates (10 years)	16,009 tons.	$291,468	$18.21
Silver (17 years)	.....	$332,059	.....
Salt (14 years)	482,563 bush	$54,711	$0.11
Sand and gravel (10 years)	68,660 tons.	$15,109	$0.23
Stone, unwrought (10 years).....	24,109 tons.	$63,222	$2.62

The principal items of export in this table are coal, gold, copper and phosphates, which together represent 81 per cent. of the value of all the mineral products exported in 1887. In coal there is an increase in the foreign trade of 33,496 tons over 1886, in consequence mainly of the larger export from British Columbia to points on the Pacific coast of the United States. The export of gold-bearing quartz is almost wholly from Nova Scotia and British Columbia to the United States, and the value is somewhat under that of the previous year. The quantity of copper exported is slightly great r than in the previous year, but the aggregate returned value is much less in consequence of the lower value per ton returned for 1887. Phosphates, which are sent chiefly to Great Britain where they are used for fertilizing purposes, show a falling off in quantity and value from the figures for the preceding year, but the trade is still considerably larger than the average for the past ten years—the period for which statistics in regard to this product are available. Next in order of value comes gypsum, the export movement in which shows an increase for the year of 41,296 tons in quantity and $51,778 in value. The export of mineral oils was greater by 50,218 gallons than in the previous year. There is a very noticeable contraction in the export of Canadian oils from that of a few years ago, some idea of which may be had by comparing the export of 1887, which was 310,667 gallons, with the yearly average for the past twenty years, which was 1,822,919 gallons. The quantity of iron ore exported in 1887 was treble that of the preceding year, Ontario alone sending out 18,907 tons as against 7,330 tons in 1886. For the five previous years the average yearly export was 36,779 tons, and for the twenty years the average was 28,546 tons. The principal remaining articles in the table are manganese, silver, salt and stone, in all of which the value of the export of 1887 is less than that of the preceding year.

The aggregate expansion in the exports for 1887 of the three classes under consideration is largely accounted for by the greatly increased trade in animals and their products, which amounted to $2,181,504 in value over the previous year. The following table presents the details:

Articles.	1887.			1886.			Yearly average 1868-87.		
	Quantity.	Value.		Quantity.	Value.		Quantity.	Value.	
		Total.	Per unit.		Total.	Per unit.		Total.	Per unit.
		$	$ c.		$	$ c.		$	$ c.
Horses .....No.	18,779	2,268,833	120 82	16,525	2,147,584	129 96	12,971	1,345,274	103 71
Horned cattle. "	116,274	6,486,718	55 79	91,866	5,825,188	63 41	61,716	2,709,714	43 91
Swine..... .. "	1,442	5,815	4 03	2,994	7,588	2 53	11,779	50,091	4 25
Sheep..... "	443,495	1,592,167	3 59	359,407	1,182,241	3 29	282,009	949,471	3 37
Poultry and other animals.....	.....	107,909	.....	.....	126,162	.....	.....	102,972	.....
Bones.....cwt.	82,570	48,164	58	141,508	94,895	67	.....	30,583	.....
Butter..... lb.	5,485,509	979,126	18	4,668,741	832,355	18			
Cheese ..... "	73,604,448	7,108,978	10	78,112,927	6,754,626	09	51,482,253	6,446,826	12½
Lard..... "	159,248	12,434	08	95,790	6,722	07			
Furs.....	.....	1,715,302	.....	.....	1,656,204	.....	.....	1,136,364	.....
Hides, skins, horns & hoofs.....	.....	593,624	.....	.....	469,087	.....	.....	377,617	.....
Honey . ..... lb.	99,708	9,750	10	9,363	1,096	12	8,453	1,020	12
Eggs.....doz.	12,945,326	1,825,559	14	12,758,532	1,728,082	14	6,622,730	923,606	14

The aggregate expansion in the exports for 1887, etc.—*Continued.*

Articles.	1887.			1886.			Yearly average 1868-87.		
	Quantity.	Value.		Quantity.	Value.		Quantity.	Value.	
		Total.	Per unit.		Total.	Per unit.		Total.	Per unit.
Meats :		$	$ c.		$	$ c.		$	$ c.
Bacon..... lb.	11,030,689	871,166	10	8,143,503	621,016	08	11,184,171	940,931	08
Ham ..... "	395,253	35,224	09	422,987	32,836	08			
Beef ..... "	450,706	22,146	05	533,353	28,745	05	2,226,890	155,132	07
Mutton .... "	415,403	20,756	05	421,715	22,146	05			
Pork..... "	617,135	36,538	06	346,105	18,911	05	2,487,041	160,727	06
Other meats "	1,374,619	108,246	08	1,009,995	99,424	10	.....	79,173	.....
Sheep pelts... No.	88,024	24,071	27	134,691	28,901	21	127,660	59,673	47
Tallow ..... lb.	28,266	1,463	05	68,700	4,730	07	320,543	21,991	07
Wool..... . "	1,416,238	317,250	22	1,524,184	316,937	21	2,261,212	680,994	30
Other articles.....	.....	55,698	.....	.....	59,957	.....	.....	65,091	.....

Yearly average export.	Quantity.	Value.	Value per unit.
Butter (19 years).....	12,294,777 lb.	$2,387,723	19.4 c.
Cheese (19 years)	40,311,925 lb.	$4,204,691	10.4 c.
Lard (19 years).....	644,864 lb.	$65,947	10.2 c.
Bacon (10 years).....	7,430,353 lb.	$615,830	8.3 c.
Hams (10 years).....	684,970 lb.	$60,689	8.8 c.
Beef (10 years)	1,257,922 lb.	$92,955	7.4 c.
Mutton (10 years)	306,298 lb.	$18,172	5.9 c.

An analysis of the returns by countries, in the general trade tables, shows that horses to the value of $38,230 were exported to Great Britain in 1887, against $19,279 worth in 1886. The figures for the cattle trade show an increase in the export of the value of $661,530, more than half of which is in consequence of the larger trade with the United Kingdom. The remainder is made up chiefly by the larger export of cattle to the United States, though a feature of the trade of 1887 was an export to Belgium amounting to 932 head, valued at $71,000. There was an increase in the number of sheep exported to Great Britain, from 36,411 in 1886 to 68,545 in 1887, representing a value of $250,466, and an increase in the number sent to the United States of 49,845, valued at $144,598. In 1887 we sent to Germany 3,204 head of sheep, valued at $20,975, against 166 head in the previous year of the value of $1,660. As compared with 1886, the export of butter was greater during the past year by 816,768 lb. in quantity and $146,771 in value, and the honey export was more than ten-fold as great as that of the previous year, amounting in 1887 to 99,708 lb. The increase in the export of the two articles last named was due chiefly to the larger trade with Great Britain. The principal decrease in the exports under the head of animals and their products occurred in regard to the article of cheese, of which 4,508,479 lb. less was exported than in 1886. This falling off was due almost wholly to the smaller trade with Great Britain. It was, however, only in regard to the quantity of the export: the declared value, owing to higher prices, was greater than in 1886 by $354,352. The egg trade, in point of value, ranks fourth in this class of exports. The figures for 1887 show a larger net export to all countries of 186,791 dozen, and to the United States alone of 199,073 dozen than in 1886. Our Dominion customs returns record an export to the United States of 12,907,956 dozen, while the United States official return credits Canada with 13,682,914 dozen.

The next greatest expansion in our foreign commerce during the year appears in respect to agricultural produce, of which there was an increased export of the value of $1,173,456 over that of the preceding year. The following table presents in detail the statistics in regard to this class of exports:

Articles.	1887.			1886.			Yearly average 1868-87.		
	Quantity.	Value.		Quantity.	Value.		Quantity.	Value.	
		Total.	Per unit		Total.	Per unit.		Total.	Per unit
		$	$ c.		$	$ c.		$	$ c.
Bran .....cwt.	111,431	73,788	66	116,107	64,513	56	63,208	42,008	66
Flax ..... "	10,128	78,422	7 74	7,286	49,301	6 77	.....	100,457	....
Fruit, green.....	.....	871,188	....	.....	499,598	.....	.....	295,558	....
Grain & products of, viz.:									
Wheat .....bush.	5,631,726	4,745,138	84	3,419,168	3,025,864	88	3,883,447	4,378,961	1 13
Barley ..... "	9,456,964	5,257,889	56	8,554,302	5,724,693	67	7,327,445	5,353,328	73
Rye..... "	124,427	67,269	54	170,764	98,666	58			
Oats ..... "	2,048,240	653,837	32	4,149,988	1,453,996	35	2,169,039	855,525	39
Pease ..... "	3,975,771	2,507,404	63	3,219,141	2,207,093	69	2,410,140	1,966,589	82
Beans..... "	198,318	207,402	1 05	156 088	156,114	1 00	91,037	109,901	1 21
Corn..... "	2,507	1,350	54	494	313	63	58,907	31,618	54
Other grain.. "	68,303	29,211	42	89.711	40,701	45	31,573	21,300	67
Flour of wheat bbls	520,213	2,322,144	4 46	386,099	1,744,969	4 52	465,309	2,440,313	5 24
Cornmeal ... "	267	733	2 75	257	840	3 27			
Oatmeal .... "	48,062	189,222	3 94	75,926	309,631	4 08			
Other meal.. "	6,436	20,298	3 15	6,392	20,191	3 16			
Hay .....tons.	76,843	743,396	9 67	93,944	1,001,336	10 66	55,164	550,077	9 97
Hops..... lb.	705	112	16	136,577	80,383	59	250,883	47,517	19
Malt.....bush.	182,176	146,012	80	284,443	222,187	78	423,856	342,470	81
Maple sugar.... lb.	215,531	15,769	07	150,955	10,870	07	83,276	6,149	07
Potatoes .....bush.	1,568,671	439,206	28	2,222,927	492,702	22	1,110,577	455,434	41
Vegetables	.....	83,639	....	.....	64,006	.....	....	100,624	....
Other seeds.....	.....	97,390	....	.....	140,025	.. ....	.....	219,559	....
Tobacco leaf... lb.	38	12	32	.....	.....	.....	86,151	6,144	07
Other articles.....	....	275,404	....	.....	244,787	.....	.....	80,739	....

Yearly average export.	Quantity.	Value.	Value per unit.
Barley (11 years)	8,210,222 bush.	$5,674,014	$0.69
Rye (11 years)..... ...	614,988 bush.	$452,989	$0.74
Flour (19 years).....	407,382 bbls.	$2,166,856	$5.32
Cornmeal (11 years)	423 bbls.	$1,306	$3.09
Oatmeal (11 years).....	74,929 bbls.	$312,990	$4.15
Other meal (11 years).....	4,002 bbls.	$11,525	$2.88
Potatoes (12 years)	1,850,961 bush.	$759,057	$0.41

The export of wheat was greater by 2,212,558 bushels, representing an increased value of $1,719,274. Of this increased export 1,958,378 bushels went to Great Britain. Wheat flour was exported to the extent of 134,114 barrels more than in 1886, of which 110,742 barrels went to Great Britain, and the remainder chiefly to the United States and

Newfoundland. The export of barley to all countries shows an increase for the year of 902,662 bushels, but the aggregate value falls below that of the previous year by $466,804, consequent upon the declared value per bushel having fallen from an average of 67 cents in 1886 to 56 cents in 1887. The export to the United States went up from 8,528,287 bushels in 1886 to 9,437,717 bushels last year, and the quantity sent to Great Britain fell from 19,153 bushels to 10,443 bushels in the same period. The export of oats in 1887 was more than fifty per cent. less than that of the previous year, the figures being 4,149,988 bushels and 2,048,240 bushels respectively. This was due principally to a shrinkage in the export to Great Britain (our largest market for oats), to the extent of 1,653,158 bushels. Germany only took 56,204 bushels against 106,878 bushels in 1886, and the export to the United States fell from 240,159 bushels to 40,342 bushels. The quantity of pease exported was 756,630 bushels more than that of 1886, in consequence of the larger trade with Great Britain. There were less quantities of rye, oatmeal and potatoes sent abroad in 1887, but in the export of fruit there was an increase in value of $371,590. From a comparison of the figures for 1887 with the twenty years' average, it will be seen that in the case of wheat, while the export of last year was greater than the average by 1,748,279 bushels in quantity, the aggregate value, corresponding with the lower value per bushel, is only greater than the general average by $366,177. Separate returns are given for barley for only eleven years past, and while the average yearly report for that period is less in quantity than that of 1887 by 1,246,742 bushels, the aggregate value is greater by $416,125. In the same way the statistics for all the leading kinds of farm produce show a considerable reduction in the declared value per unit of the exports in keeping with their lower values in the market.

Relative Exports.—A statement of the relative interchange of home merchandise between Canada and the United States is next given in table VI according to the export returns of the two countries respectively. Owing, however, to the inadequate facilities for registering all exports these returns are necessarily very incomplete, and a comparison based upon the statistics thus obtained is not strictly reliable. The amount short returned at inland ports and exported to the United States is estimated by the Dominion authorities at $2,996,889 for the fiscal year 1887, while the officials of the United States for the same period estimate that their published reports of exports to Canada alone are below the actual figures by $20,000,000. The table gives by quantity and values in detail exported goods the produce or manufacture of each country.

The following summary of the table gives by values the exports in the several classes of produce for the three years 1885, 1886 and 1887 :

Classes of products.	Canada's exports to United States.			United States' exports to Canada.		
	1887.	1886.	1885.	1887.	1886.	1885.
	$	$	$	$	$	$
The Mine	3,085,431	3,115,696	2,898,518	4,450,260	3,948,524	4,482,635
The Fisheries	2,717,509	2,587,548	3,560,731	156,909	222,824	244,935
The Forest	9,353,506	8,545,406	9,355,736	1,070,189	1,241,418	1.561,280
Animals and their produce	7,291,369	6,742,789	6,789,562	7,071,498	7,343,106	8,515,679
Agricultural products	7,969,716	8,756,667	8,395,370	12,342,880	10,591,520	11,699,822
Manufactures	1,285,584	1,203,835	1,133,497	7,159,115	7,238,660	7,556,029
Miscellaneous	569,918	551,351	485,179	77,185	58,233	51,874
Totals	32,273,033	31,503,292	32,618,593	32,328,036	30,644,285	34,112,254

By this it will be seen that the balance of trade is but slightly in favor of the United States. Canada's annual surplus of exports for the three years in fisheries, forest and miscellaneous products is $11,014,012, while the United States' annual export to Canada in the mine, animals, agriculture and manufactures is in excess by $11,243,898. The bulk of Canada's exports of the mine consists of coal and gold quartz from Nova Scotia, while United States returns coal and oil. In the class of animals and their products Canada exports horses, cattle, sheep and eggs, and the United States exchanges swine, meats, cheese, and lard. Of agricultural products Canada exports barley, hay and potatoes, and the United States returns cotton, corn, wheat, flour and tobacco. Of course the exports to any country are not necessarily for consumption in that country. Table IV shows that Canada re-exported in 1887 nearly all the imported wheat and over 60 per cent. of the corn. Coin and bullion have been excluded from all tables of exports and imports.

Canada's total exports, including goods the produce and not the produce of the Dominion, are given for the seven years of the present decade, viz. 1881-7, in the following table. It shows what Canada has exported to Great Britain, the United States and all other countries, and also what Great Britain and the United States have exported to Canada :

Exports.		1887.	1886.	1885.	1884.	1883.	1882.	1881.
		$	$	$	$	$	$	$
Canada's exports to Great Britain.	Home...	38,714,331	36,694,263	36,479,051	37,410,870	39,672,104	39,816,813	42,637,219
	Foreign	5,856,981	4,846,041	5,392,940	6,324,767	7,473,113	5,457,117	11,110,151
	Total ..	44,571,312	41,540,304	41,871,991	43,735,637	47,145,217	45,273,930	53,747,370
Canada's exports to United States.	Home...	32,273,033	31,503,292	32,618,593	31,631,622	35,962,464	41,687,638	31,016,309
	Foreign	2,385,242	2,244,179	2,164,658	2,324,197	1,657,935	1,787,565	1,862,789
	Total ..	34,658,275	33,747,471	34,783,251	33,955,819	37,620,399	43,475,203	32,879,098
Estimated shortage at inland ports and exported to U. S.....		2,996,889	2,781,198	2,948,217	2,701,019	3,416,724	4,094,946	3,023,322
Canada's exports to all other countries.	Home...	6,976,656	6,777,951	7,085,874	8,089,587	8,651,139	8,602,163	7,269,051
	Foreign	302,110	347,859	522,048	740,142	620,725	319,868	400,977
	Total .	7,278,766	7,125,810	7,607,922	8,829,729	9,271,864	8,922,031	7,670,028
Canada's total exports.	Home...	77,964,020	74,975,506	76,183,518	77,132,079	84,285,707	90,106,614	80,922,579
	Foreign	8,549,333	7,438,079	8,079,646	9,389,106	9,751,773	7,564,550	13,373,917
	Total ..	86,513,353	82,413,585	84,263,164	86,521,185	94,037,480	97,671,164	94,296,496
Great Britain's exports to Canada.*	Home...	39,391,851	38,392,486	35,070,090	42,109,252	44,558,845	47,206,457	40,931,713
	Foreign	6,405,872	6,676,867	7,088,130	6,785,559	6,461,829	7,115,485	6,019,828
	Total ..	45,797,723	45,069,353	42,158,220	48,894,811	51,020,674	54,321,942	46,951,541
United States' exports to Canada.	Home...	32,328,036	30,644,285	34,112,254	40,423,820	40,716,505	33,234,735	34,199,694
	Foreign	2,660,074	2,818,515	4,133,380	3,882,376	3,700,605	3,265,668	3,703,628
	Total ..	34,988,110	33,462,800	38,245,634	44,306,196	44,417,110	36,500,403	37,903,322

Taking the figures for 1887, we notice that over 41 per cent. of Canada's exports of home goods and 28 per cent. of foreign goods went to the United States, while nearly 50 per cent. of home goods and 68 per cent. of foreign goods were exported to Great Britain. During the seven years Canada exported $561,570,023 of home produce, of which 42 per cent. and 48 per cent. went to the United States and Great Britain respectively. The value of the

* Including Newfoundland.

goods exported, not the produce of Canada, was $64,146,404, of which 22½ per cent. and 72½ per cent. went to the United States and Great Britain respectively. Although as has been noticed the interchange in exports of home produce between Canada and the United States in 1887 was nearly equal, yet for the seven years 1881-7 the average annual balance in favor of the United States has been $1,280,911 in home and $1,391,097 in foreign produce. With the exception of exports of home merchandise the British trade tables include Newfoundland with Canada, but for sake of comparison Newfoundland has been included throughout. Deducting the average annual export of home merchandise to Newfoundland, which has been $2,231,328, we find that Great Britain's average annual exports of home goods to the Dominion proper have been $38,863,057 for the seven years, as compared with Canada's average export of home goods to Great Britain of $38,774,950,—a very slight difference. The interchange of foreign goods is also very nearly equal, the average export from Great Britain to Canada and from Canada to Great Britain being $6,650,510 and $6,637,301 respectively, for the period.

Relative Imports.—To get a more correct comparison of the trade between the two countries we must examine the blue books on imports. On account of the tariff system we must assume that the entries of imports are recorded as correctly as the vigilance of the authorities can make them. In table VII is shown Canada's total imports entered for home consumption and the portion imported from United States; also, United States total imports from Canada (including goods for home consumption and for warehouse.) The following summary gives the total values by classes of produce for the two years 1886 and 1887:

Classes of products.	Canada's total imports.		Canada's imports from United States.		UnitedStates'imports from Canada.	
	1887.	1886.	1887.	1886.	1887.	1886.
	$	$	$	$	$	$
The Mine	9,416,601	8,126,238	8,672,583	7,389,746	1,656,530	1,568,442
The Fisheries	879,569	858,114	458,499	429,314	2,474,557	2,040,980
The Forest	1,025,737	1,007,286	1,014,379	996,189	9,731,431	8,988,668
Animals and their produce	7.849,953	7,363,443	5,401,901	5,113,260	9,634,122	8,447,080
Agricultural products	14,965,827	15,810.994	8,991,550	9,373,884	9,758,570	10,615,963
Manufactures	68,358,629	60,082,191	18,723,861	17,822,580	1,333,014	1,386,697
Miscellaneous	2,610,894	2,743,871	1,533,135	1,693,678	3,259,053	4,256,206
Totals	105,107,210	95,992,137	44,795,908	42,818,651	37,847,277	37,304,036

Our total imports have increased over $9,000,000, the main increase being in manufactures. Two millions has been added to our imports from the United States, more than half of which has been in coal. Of the $37,847,277 which the United States imported from Canada only $31,375,942 was for *immediate* consumption, but the quantity subsequently withdrawn from warehouse for *home* consumption is not given in the trade returns by countries whence imported, so that direct comparison cannot be made. As neither of the trade returns shows whether or not the goods are produce of the country whence imported, and as they cannot tell us what portion is consumed in the country to which exported, we meet obstacles in both approaches in our endeavor to trace a true comparison of trade on the basis of home goods *consumed*. If we include goods not for home consumption, our imports from United States exceeded the latter's imports from us in 1887 by nearly $12,000,000. To follow the chain of trade a close study in detail should be made of tables VI and VII conjointly. For instance, table VI shows that the United States exports us cheese, corn, wheat, etc., all home produce, yet we import for consumption only a small fraction thereof as shown in table VII. It has been stated that discrepancies must exist between the two systems of enumeration of export and import returns, but it is in the

details that we notice them more forcibly. The following summary of imports over the seven years of the present decade separates them into dutiable and free goods and introduces our imports for home consumption from Great Britain and Great Britain's total imports from Canada by way of comparison:

Imports for home consumption.		1887.	1886	1885.	1884.	1883.	1882.	1881.
		$	$	$	$	$	$	$
Canada's imports from Great Britain.	Dutiable.	35,766,273	30,385,797	30,702,359	32,828,307	40,732,476	41,459,730	35,860,461
	Free	8,975,077	8,647,209	9,329,089	9,096,814	10,947,286	8,896,538	7,024,681
	Total....	44,741,350	39,033,006	40,031,448	41,925,121	51,679,762	50,356,268	42,885,142
Canada's imports from Unit'd States.	Dutiable.	30,570,609	29,659,876	31,231,947	35,796,697	38,652,045	32,941,061	25,632,313
	Free	14,225,299	13,158,775	14,344,563	13,989,191	16,495,198	14,111,874	10,706,388
	Total....	44,795,908	42,818,651	45,576,510	49,785,888	55,147,243	47,052,935	36,338,701
Canada's imports from all other countries.	Dutiable.	11,783,797	10,613,146	11,335,312	11,385 494	12,203,818	11,356,642	10,127,951
	Free	3,786,155	3,527,334	2,812,505	2,876,475	2,830,673	2,379,339	1,136,535
	Total....	15,569,952	14,140,480	14,147,817	14,261,969	15,034,491	13,735,981	11,264,486
Canada's total imports.	Dutiable.	78,120,679	70,658,819	73,269,618	80,010,498	91,588,339	85,757,433	71,620,725
	Free	26,986,531	25,333,318	26,486,157	25,962,480	30,273,157	25,387,751	18,867,604
	Total....	105,107,210	95,992,137	99,755,775	105,972,978	121,861,496	111,145,184	90,488,329
Canada's total imports not for home consumption.....		7,252,808	4,821,867	8,216,399	6,231,467	9,117,003	6,770,573	13,719,236
Great Britain's imports from Canada.*....		51,415,005	50,688,222	50,356,325	53,726,681	59,780,805	50,568,803	54,997,314
United States' imports from Canada.	Dutiable.	25,997,113	25,293,503	24,052,567	23,775,335	30,537,443	38,348,545	27,100,054
	Free	11,850,164	12,005,533	12,643,118	14,624,500	13,756,715	12,427,036	10,584,047
	Total....	37,847,277	37,304.036	36,695,685	38,399,835	44,294,158	50,775,581	37,684,101
U. S. imports from Canada for immediate consumption.....		31,375,942	30,456,711	30,470,611	32,208,277	35,694,031	39,061,395	30,570,958

Taking the whole period of seven years rather than any particular year, and excluding as usual coin and bullion, we find that our average annual imports for home consumption from all countries have been $104,331,873, consisting of $78,718,016 of dutiable and $25,613,857 of free goods. Of the dutiable goods nearly 41 per cent. is imported from the United States and 45 per cent. from Great Britain, while the United States contributes 54 per cent. and Great Britain 35 per cent. of the goods admitted free of duty. Our average imports from the United States have been $45,930,834 for home consumption alone, while in a former summary we find the United States' average annual export for the same period of domestic and foreign merchandise to Canada to be $38,546,225. This shows a wide difference between the import and export returns—a difference which must be further augmented by the amount of Canada's imports not for consumption. This averaged annually $8,018,479 from all sources, and the bulk is imported from the United States. Similarly, United States' average annual imports from Canada have been $27,872,794 in dutiable and $12,555,873 in free goods, making a total of $40,428,667, of which $32,833,989 was imported for *immediate* consumption, while our former summary again shows that Canada exported to the United States $35,874,217 including goods not the produce of the Dominion. These amounts differ by $4,554,450, a portion of which is accounted for by an amount short at inland ports and exported

* Including Newfoundland.

to the United States estimated by the Dominion authorities averaging annually over the seven years at $3,137,474. Canada's total imports from all sources for home consumption has exceeded annually for the seven years her exports of home produce by $24,107,584, and the excess was over $6,000,000 more in 1887 than in 1886. Our average imports for consumption from, have exceeded our exports of home produce to, the United States by $12,117,555, while the excess relative to Great Britain has been $5,603,921. The average annual imports of Great Britain from Canada including Newfoundland, have been $53,076,165 for the seven years, an amount which exceeds her average total exports to Canada by $5,331,270.

Iron and Steel Imports.—In 1887 over 65 per cent. of our total imports appear under the class of manufactures, while cottons, woollens, sugars and manufactures of iron and steel make up one-half of this class. Owing to the increasing interest taken in the development of our mineral resources, a review of our importations of the manufactured product may not prove uninteresting. The following table summarizes our imports of manufactures of iron and steel (including agricultural implements) for the seven years of the present decade, and shows, by values, the amount of dutiable and free goods imported from Great Britain, United States and all other countries :

Imports of manufactures of iron and steel for home consumption.		1887.	1886.	1885.	1884.	1883.	1882.	1881.
		$	$	$	$	$	$	$
Great Britain ..	Dutiable.	5,303,201	3,992,711	3,957,372	5,149,530	6,698,185	6,050,301	3,963,930
	Free	2,385,182	1,990,186	2,350,942	2,983,024	3,947,819	3,818,933	4,055,953
	Total....	7,688,383	5,982,897	6,308,314	8,132,554	10,646,004	9,869,234	8,019,883
United States...	Dutiable.	4,006,915	3,674,450	3,409,947	4,850,658	6,759,223	5,561,851	3 620,041
	Free	247,614	260,929	583,048	827,222	1,566,118	837,994	280,334
	Total....	4,254,529	3,935,379	3,992,995	5,677,880	8,325,341	6,399,845	3,900,375
Other Countries.	Dutiable.	436,551	333,239	278,715	303,774	257,228	289,970	242,573
	Free	92,190	14,768	9,405	12,114	26,915	27,700	21,318
	Total....	528,741	348,007	288,120	315,888	284,143	317,670	263,891
Totals.....	Dutiable.	9,746,667	8,000,400	7,646,034	10,303,962	13,714,636	11,902,122	7,826,544
	Free	2,724,986	2,265,883	2,943,395	3,822.360	5,540,852	4,684,627	4,357,605
	Total....	12,471,653	10,266,283	10,589,429	14,126,322	19,255,488	16,586,749	12,184,149

It will be seen by this table that Great Britain and the United States control nearly the whole trade in this line, which for the period of seven years has been over 13 per cent. of our imports of all classes of merchandise. The average annual import for the seven years has been $9,877,195 of dutiable and $3,762,815 of free goods, making a total of $13,640,010. Of this amount $8,092,467 or nearly 60 per cent. was imported from Great Britain, and $5,212,335 or over 38 per cent. from the United States. Of the free iron and steel goods $3,076,006 or nearly 82 per cent. has been the average annual import for the seven years from Great Britain, and only $657,608 or 17½ per cent. from the United States. Of dutiable goods we imported in the same period an annual average of $5,016,461 from Great Britain, and $4,554,727 from the United States, being 51 per cent. from the former country and 46 per cent. from the latter.

In the above summary the classification of the Dominion trade returns has been followed. The totals therefore do not embrace tinplate, printing presses and such combined wood and iron or steel articles as carriages, cars, bicycles, etc., although agricultural

implements are included in said classification. The average annual imports of tinplate for the seven years have been $759,777, of which Great Britain supplied $684,489, and of printing presses $101.258, of which $88,869 is contributed by the United States. Tin plate has been on the free list since 1882 but printing presses have been dutiable for the period.

Agricultural Societies.—Table viii shows the receipts and expenditure of Electoral District, Township and Horticultural Societies in Ontario for the years 1885, 1886 and 1887. For the first of those years 87 Electoral District and 334 other societies made returns of financial statements, for the second year 87 and 330, and for the third year 88 and 330. There are small discrepancies in the balances, due in part to faulty book-keeping, but chiefly to the circumstance that a few societies have each year failed to forward their financial statements to the Department, The auditing of treasurers' accounts appears to be done in a perfunctory way in too many cases, and this is a matter to which the directors of societies might give more attention than they do. Another item in the table calls for a word of explanation, viz., the Legislative grants. Excepting for a few societies in the outlying districts, the Legislative grants go to the Electoral District Societies, and are by them distributed to the local societies on a basis provided for in the Agriculture and Arts Act. Nearly the whole amount, therefore, of the appropriation to local societies is paid out of the grants to Electoral District Societies, as shown under the head of expenditure, and the aggregate is made up in part of a cross-entry. The actual grant is the total under the head of receipts, less the sum under the head of expenditure. As indicating the financial prosperity of the societies, it will be observed that in 1885 the receipts were $338,205 76, in 1886 $353,645.89 and in 1887 $373,-496.72, while in 1885 the expenditure was $308,130.93, in 1886 $325,421.76 and in 1887 $349,583.21. In 1887 the receipts fell short of the expenditure in 25 Electoral District and 61 local societies, and these balances due treasurers as shown separately in the table throughout.

STATISTICS OF

SCHOOLS, PUBLIC LANDS, INTERNATIONAL TRADE, ETC.

SCHOOLS.

TABLE No. I.—Statistics of the High, Public and Separate

Year.	High Schools.								Public					
	Number of Schools.	Number of pupils on roll of all ages.	Average attendance.	Number of teachers employed.	Total salaries paid.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of average attendance.	Number of schools.	Number of pupils on roll of all ages.	Average attendance.	Number of teachers employed.		
												Male.	Female.	Total.
					$	$	$	$ c.						
1842..	25	.....	.....	....	.....	....	.....	.....	1,721	65,978	.....	.....	.....	.....
1843*.	....	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
1844..	25	.....	.....	....	.....	....	.....	.....	2,610	96,756	.....	.....	.....	.....
1845..	31	.....	.....	....	.....	....	.....	.....	2,736	110,002	.....	.....	.....	2,860
1846..	32	.....	.....	....	.....	....	.....	.....	2,589	101.912	.....	.....	.....	2,925
1847..	32	1,000	.....	....	.....	....	.....	.....	2,727	124,829	.....	2,365	663	3,028
1848..	33	1,115	.....	....	.....	....	.....	.....	2,800	130,739	.....	2,507	670	3,177
1849..	39	1,120	.....	....	.....	....	.....	.....	2,871	138,465	.....	2,505	704	3,209
1850..	57	2,070	.....	..	.....	....	.....	....	2,959	151,891	52,630	2,597	779	3,376
1851..	54	2,191	.....	....	.....	....	.....	....	2,985	168,159	58,053	2,551	826	3,377
1852..	60	2,343	.....	....	.....	....	.....	....	2,992	179,587	61,862	2,541	847	3,388
1853..	64	3,221	.....	....	.....	....	.....	....	3,093	194,736	67,112	2,501	938	3,439
1854..	64	4,287	.....	92	43,490	473	47,033	.....	3,200	204,168	71,679	2,508	1,031	3,539
1855..	65	3,726	.....	95	46,255	487	54,140	.....	3,284	222,979	78,043	2,531	977	3,508
1856..	61	3,386	.....	90	47,659	529	63,023	.....	3,391	243,935	85,377	2,562	1,032	3,594
1857..	72	4,973	.....	107	57,552	538	76,707	.....	3,631	262,673	92,936	2,727	1,244	3,971
1858..	75	4,459	.....	112	52,940	473	61,662	.....	3,772	283,692	98,491	2,901	1,183	4,084
1859..	81	4,381	.....	121	61,564	509	74,850	.....	3,848	288,598	104,653	3,037	1,050	4,087
1860..	88	4,546	.....	127	64,005	504	77,557	...	3,854	301,104	113,348	3,019	1,100	4,119
1861..	86	4,765	.....	123	71,034	577	81,108	.....	3,910	316,287	119,711	2,960	1,219	4,179
1862..	91	4,982	.....	131	73,211	559	86,244	.....	3,995	329,033	128,714	3,028	1,216	4,244
1863..	95	5,352	. .	141	76,121	540	85,910	...	4,013	344,949	131,505	3,016	1,317	4,333
1864..	95	5,589	.....	139	75,854	546	85,816	.....	4,077	354,330	141,343	2,928	1,507	4,435
1865..	104	5,754	.....	149	81,562	547	94,241	.....	4,151	365,552	148,248	2,849	1,672	4,521
1866..	104	5,719	....	151	87,055	576	113,887	.....	4,222	372,320	149,528	2,855	1,727	4,582
1867..	102	5,696	2,712	159	94,820	596	124,181	45 79	4,261	382,719	155,368	2,767	1,913	4,680
1868..	101	5,649	2,542	161	95,848	595	117,647	46 28	4,318	399,305	160,673	2,683	2,077	4,760
1869..	101	6,608	2,924	165	97,009	588	114,502	39 16	4,359	411,746	168,722	2,681	2,145	4,826
1870..	101	7,351	3,432	172	105,153	611	137,566	40 08	4,403	421,866	171,603	2,657	2,272	4,929
1871..	102	7,490	3,745	174	113,862	654	152,880	40 82	4,438	425,126	177,923	2,557	2,510	5,067
1872..	104	7,968	4,040	239	141,812	593	210,005	51 98	4,490	433,256	178,117	2,539	2,683	5,222
1873..	108	8,437	4,460	252	165,358	656	234,215	52 51	4,562	438,911	181.067	2,490	2,883	5,373
1874..	108	7,871	4,256	248	179,946	726	286,593	67 34	4,592	441,261	181,048	2,509	2,949	5,458
1875..	108	8,342	4,499	253	184,752	730	300,741	66 85	4,678	451,568	186,800	2,556	3,182	5,738
1876..	104	8,541	4,789	266	195,906	736	304,948	63 68	4,875	465,243	199,704	2,685	3,198	5,883
1877..	104	9,229	5,287	280	211,607	756	343,710	65 00	4,955	465,908	204,635	2,915	3,219	6,134
1878..	104	10,574	6.054	298	223,010	748	396,010	65 41	4,913	463,405	211,416	2,956	3,184	6,140
1879..	104	12,136	7,099	320	241,097	753	400,788	56 46	4,932	462,233	206,369	3,052	3,198	6,250
1880..	104	12,910	7,393	335	247,894	740	413,930	55 99	4,941	457,734	207,334	3,164	3,239	6,403
1881..	104	12,136	7,424	333	257,218	772	345,850	46 59	5,043	451,449	202,252	3,257	3,291	6.548
1882..	104	12,348	6,728	332	253,864	765	343,720	51 09	5,010	445,364	200,602	2,964	3,563	6,467
1883..	104	11,843	6,454	347	266,317	767	348,946	54 07	5,058	438,192	201,856	2,732	3.782	6,514
1884..	106	12,737	7,302	358	282,776	790	385,426	52 78	5,109	439,454	207,301	2,694	3,964	6,658
1885..	107	14,250	8,207	365	294,078	806	429,762	52 37	5,177	444,868	210,659	2,646	4,119	6,765
1886..	109	15,344	8,797	378	307,517	814	477,797	54 31	5,213	458,297	223,085	2,622	4,271	6,903

*No report in consequence of a change in the School Law.

SCHOOLS.

Schools of Ontario for the forty-five years 1842-86.

Schools.				Separate Schools.										
Total salaries paid teachers.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of average attendance.	Number of schools.	Number of pupils on roll of all ages.	Average attendance.	Number of teachers employed. Male.	Female.	Total.	Total salaries paid teachers.	Average salary paid.	Total expenditure for school purposes.	Expenditure per capita of average attendance.	Year
$	$	$	$											
166,000	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1842
.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*1843
206,856	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1844
286,056	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1845
271,624	93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1846
310,306	102	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1847
344,276	108	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1848
353,912	110	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1849
353,716	105	410,472	7 80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1850
391,308	116	468,644	8 07	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	1851
428,948	127	529,314	8 56	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	1852
489,764	142	617,836	9 20	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	1853
578,868	163	754,340	10 52	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	1854
670,988	191	885,959	11 35	41	4,885	2,076	37	20	57	9,120	160	13,313	6 41	1855
767,340	214	1,057,636	12 39	81	7,210	3,064	60	35	95	12,340	130	20,472	6 68	1856
841,489	212	1,179,790	12 59	100	9,694	4,320	60	52	112	18,743	167	32,368	7 49	1857
760,885	186	1,014,929	10 30	94	9,991	4,601	64	54	118	16,731	142	28,206	6 13	1858
836,322	205	1,079,483	10 31	105	12,994	5,208	78	70	148	23,003	155	30,563	5 87	1859
872,386	212	1,128,414	9 95	115	14,708	5,663	81	81	162	23,205	143	31,360	5 54	1860
893,585	214	1,160,477	9 70	109	13,631	6,222	71	86	157	24,528	156	30,941	4 97	1861
934,588	220	1,200,614	9 33	109	14,700	6,370	87	75	162	25,188	155	31,379	4 93	1862
962,114	222	1,220,638	9 28	120	15,859	6,531	78	93	171	25,441	149	33,809	5 18	1863
965,976	218	1,243,168	8 80	147	17,365	8,226	83	107	190	30,980	163	42,150	5 12	1864
1,007,099	223	1,309,659	8 83	152	18,101	8,518	81	119	200	33,953	170	46,220	5 43	1865
1,034,134	226	1,342,194	8 98	157	18,575	8,337	70	137	207	32,746	158	45,039	5 40	1866
1,058,686	226	1,424,560	9 17	161	18,924	8,606	82	128	210	34,830	166	48,628	5 65	1867
1,107,698	233	1,532,983	9 54	162	20,594	9,305	94	142	236	38,846	165	55,452	5 96	1868
1,136,537	235	1,568,147	9 29	165	20,684	9,331	94	134	228	38,629	169	56,750	6 08	1869
1,180,942	240	1,653,561	9 64	163	20,652	10,035	96	140	236	41,739	177	58,500	5 83	1870
1,249,083	247	1,733,476	9 74	160	21,200	10,371	84	155	239	42,393	177	69,818	6 73	1871
1,325,770	254	2,138,554	12 01	171	21,406	10,584	87	167	254	45,824	180	68,810	6 50	1872
1,470,817	274	2,521,256	13 92	170	22,073	11,123	91	178	269	49,306	183	83,270	7 49	1873
1,596,606	292	2,776,968	15 34	166	22,786	11,850	92	186	278	51,144	184	88,364	7 46	1874
1,700,074	296	2,902,453	15 54	165	22,673	11,774	89	191	280	58,026	207	90,627	7 70	1875
1,775,300	302	2,899,973	14 52	167	25,294	12,779	95	207	302	63,021	209	106,483	8 33	1876
1,867,899	305	2,853,223	13 94	185	24,952	12,549	105	229	334	70,200	210	120,266	9 58	1877
1,940,906	318	2,768,788	13 10	177	25,610	13,172	104	229	333	70,301	211	120,559	9 15	1878
1,997,657	320	2,710,253	13 13	191	24,779	13,073	101	245	346	75,165	217	122,831	9 40	1879
2,035,895	318	2,693,589	12 99	196	25,311	12,734	100	244	344	77,285	225	128,463	10 09	1880
2,030,159	310	2,720,547	13 45	195	24,819	13,012	105	269	374	75,860	263	123,724	9 51	1881
2,060,353	319	2,683,254	13 38	193	26,148	13,574	98	292	390	84,095	216	154,340	11 37	1882
2,118,485	325	2,954,818	14 64	194	26,177	13,705	97	300	397	91,702	231	153,611	11 21	1883
2,200,311	330	3,104,385	14 98	207	27,463	14,560	95	332	427	95,716	224	176,477	12 12	1884
2,226,697	329	3,108,169	14 75	218	27,590	15,248	98	355	453	100,353	222	204,531	13 41	1885
2,282,792	331	3,277,968	14 69	224	29,199	15,959	95	366	461	102,672	223	179,730	11 26	1886

SCHOOLS.

TABLE No. II.—Summary Statistics of the High, Public and Separate Schools of Ontario for the thirty-three years 1854-86.

Year.	Population between the ages of 5 and 16 years.	High, Public and Separate Schools.						Superannuation Fund.				
		Schools in operation.	Pupils enrolled of all ages.	*Average attendance.	Teachers employed.	Salaries paid teachers.	Total expenditure.	No. on List.			Total payments.	Average payments.
								Male.	Female.	Total.		
						$	$				$	$
1854.....	277,922	3,308	208,455	71,679	3,631	622,358	801,373	40	.....	40	3,344	84
1855.....	297,623	3,390	231.590	80,119	3,660	726,363	953,412	78	2	80	5,618	70
1856	311,316	3,533	254,531	88,441	3,779	827,339	1,141,131	122	6	128	6,535	51
1857.....	324,888	3,803	276,440	97,256	4.190	917,784	1,288,865	119	6	125	5,112	41
1858.....	360,578	3,941	298,142	103,092	4,314	830,556	1,104,797	147	8	155	2,263	17
1859.....	362,085	4,034	305,973	109,861	4,356	920,899	1,184,896	145	9	154	3,922	25
1860	373,589	4,057	320,358	119,011	4,408	959,596	1,237,331	143	8	151	4,085	27
1861.....	384,980	4,105	334,683	125,933	4,459	989,147	1,272,526	152	9	161	4,081	25
1862.....	403,302	4,195	348,715	135,084	4,537	1,032,087	1,318,237	154	10	164	5,438	33
1863.....	412,367	4,228	366,160	138,036	4,645	1,063,676	1,340,357	156	12	168	3,245	19
1864... ..	424,565	4,319	377,284	149,569	4,764	1,072,810	1,371,134	146	12	158	3,611	23
1865.....	426,757	4,407	389,407	156,766	4,870	1,122,614	1,450,120	143	11	154	3,997	26
1866	431,815	4,483	396,614	157,865	4,940	1,153,935	1,501,120	134	11	145	3,726	26
1867.....	447,726	4,524	407,339	166,686	5,049	1,188,336	1,597,369	135	12	147	4,162	28
1868.....	464,315	4,581	425,548	172,520	5,157	1,242,392	1,706,082	131	12	143	5,957	42
1869.....	470,400	4,625	439,038	180,977	5,219	1,272,175	1,739,399	119	12	131	6,332	48
1870.....	483,966	4,667	449,869	185,070	5,337	1,327,834	1,849,627	118	13	131	6,376	48
1871	489,615	4,700	453,816	192,039	5,480	1,405,338	1,956,174	112	12	124	6,016	49
1872.....	495,756	4,765	462,630	192,741	5,715	1,513,406	2,417,369	128	13	141	11,942	85
1873.....	504,869	4,840	469,421	196,650	5,894	1,685,481	2,838,741	139	14	153	19,097	125
1874.....	511,603	4,866	471,918	197,154	5,984	1,827,696	3,151,925	171	18	189	22,910	121
1875	501,083	4,951	482,583	203,073	6,271	1,942,852	3,293,821	205	24	229	26,509	116
1876.....	502,250	5,146	499,078	217,272	6,451	2,034,227	3,311,404	241	25	266	31,769	119
1877.....	494,804	5,244	500,089	222,471	6,748	2,149,706	3,317,199	269	24	293	35,484	121
1878	492,360	5,194	499,589	230,642	6,771	2,234,217	3,285,357	307	32	339	41,319	122
1879.....	494,424	5,227	499,148	226,541	6,916	2,313,919	3,233,872	328	32	360	43,774	122
1880.....	489,924	5,241	495,955	227,461	7,082	2,361,074	3,235,982	353	38	391	38,229	123
1881.....	484,224	5,342	489,404	222,688	7,255	2,363,237	3,190,121	361	38	399	49,129	123
1882.....	483,817	5,307	483,860	220,904	7,189	2,398,312	3,181,314	381	41	422	51,000	121
1883	478,791	5,356	476,212	222,015	7,258	2,476,504	3,457,375	373	49	422	51,500	122
1884.... .	471,287	5,422	479,654	229,163	7,443	2,578,803	3,666,288	388	55	443	54,234	122
1885	†583,147	5,502	486,708	234,114	7,583	2,621,128	3,742,462	368	55	423	55,003	130
1886	†601,204	5,546	502,840	247,841	7,742	2,692,981	3,935,495	385	55	440	58,791	134

* Average attendance for years 1854-66 does not include High Schools.
† Between 5 and 21 years of age (amended Act.)

PUBLIC LANDS AND TIMBER LIMITS.

TABLE No. III.—Statistics of the Area and Value of Public Lands sold and Timber Limits under license in Ontario in the twenty-one years 1867-87.

Year.	Area of Lands sold.							Timber Limits.	
	Crown Lands.	Clergy Lands.	Common School Lands.	Grammar School Lands.	Total Public Lands Sold.	Value.	Average Value per Acre.	Area under License.	Accrued Dues, Rents, Bonuses, etc.
	Acres.	Acres.	Acres.	Acres.	Acres.	$	$ c.	Sq. Miles.	$
1867....	11,592	4,030	1,461	609	17,692	30,215	1 70	6,155	107,649
1868....	23,299	9,528	4,322	2,835	39,984	60,649	1 52	11,584	190,238
1869....	33,275	11,312	6,183	2,447	53,217	143,754	2 70	12,066	508,562
1870....	37,538	10,162	3,256	1,263	52,219	69,791	1 34	12,005	379,965
1871....	78,037	8,535	3,702	1,998	92,272	158,566	1 72	12,534	570,882
1872....	113,623	16,100	2,068	3,906	135,697	185,071	1 36	12,358	659,156
1873....	98,715	33,448	4,908	13,244	150,315	215,376	1 43	14,555	568,725
1874....	96,995	20,532	3,583	11,652	132,762	180,874	1 36	16,259	425,505
1875....	51,952	6,434	1,945	4,622	64,953	79,960	1 08	15,769	377,504
1876....	51,387	7,255	2,039	3,511	64,192	83,005	1 11	14,981	362,398
1877....	35,506	5,287	3,551	2,327	46,671	59,340	1 28	16,132	409,340
1878....	39,164	3,757	2,299	3,375	48,595	51,055	1 05	16,005	293,310
1879....	25,071	2,488	1,463	1,279	30,301	35,219	1 13	16,084	342,894
1880....	30,722	1,977	1,002	1,389	35,090	31,955	0 91	15,940	413,416
1881....	88,543	7,126	1,292	1,295	98,256	64,508	0 66	15,612	537,934
1882....	98,814	4,693	555	1,959	106,021	106,292	1 00	17,989	547,103
1883....	69,357	3,233	448	863	73,901	65,446	0 89	16,886	480,490
1884....	61,189	3,669	337	730	65,925	55,425	0 84	16,840	421,485
1885....	99,919	1,270	66	1,572	102,827	92,093	0 90	17,215	657,298
1886....	55,641	1,788	157	783	58,369	53,707	0 92	18,486	742,030
1887....	67,315	1,585	292	605	69,797	79,696	1 14	15,850	1,019,517
Totals.	1,267,654	164,209	44,929	62,264	1,539,056	1,901,997	1 24	.....	.....
Average annual sales..	60,365	7,819	2,149	2,965	73,288	90,571	.....	.....	.....

IMPORTS AND EXPORTS OF GRAIN AND BREADSTUFFS.

TABLE No. IV.—Statement of Imports and Exports of Wheat, Corn, Barley, Oats, Pease, Flour, etc., for the Dominion of Canada, for the fifteen years ending June 30, 1887.

	Total imports.	Total exports.	Exports not produce of Canada.	Net surplus or deficit (-).	Value of total exports.
					$
1873.					
Wheat.....Bush.	5,804,630	6,405,673	2,025,932	601,043	8,944,139
Indian Corn..... "	8,833,643	6,949,595	6,242,976	-1,884,048	3,988,370
Barley and Rye..... "	1,343,370	4,346,923	.....	4,826,664	2,956,106
Oats..... "		629,467	.....		217,028
Pease..... "		1,143,278	15,251		938,409
Beans..... "		50,366	.....		72,329
Flour of Wheat and Rye. Bbls.	273,265	531,366	9,511	-82	3,189,294
Meal of all kinds..... "	258,183				
1874.					
Wheat.....Bush.	8,390,443	12,011,059	5,429,842	3,620,616	15,046,712
Indian Corn..... "	5,331,307	2,680,568	2,444,704	-2,650,739	1,778,121
Barley and Rye..... "	643,982	3,748,270	.....	5,909,613	4,076,855
Oats..... "		998,100	.....		455,799
Pease..... "		1,717,129	17		1,393,798
Beans..... "		90,096	.....		132,928
Flour of Wheat and Rye. Bbls.	288,156	554,341	14,024	266,185	3,274,130
Meal of all kinds..... "	232,263	54,881	1,719	-177,382	237,885
1875.					
Wheat.....Bush.	5,105,158	7,053,544	2,670,522	1,948,386	8,420,785
Indian Corn..... "	3,679,746	2,080,090	2,051,691	-1,599,656	1,589,064
Barley and Rye..... "	294,623	5,419,054	.....	11,092,124	5,363,271
Oats..... "		2,989,839	.....		1,446,795
Pease..... "		2,866,404	26,623		2,684,306
Beans..... "		111,450	.....		128,534
Flour of Wheat and Rye. Bbls.	467,786	308,981	6,198	-158,805	1,583,284
Meal of all kinds..... "	156,998	30,726	.....	-126,272	140,398
1876.					
Wheat.....Bush.	5,838,156	9,248,390	3,177,997	3,410,234	10,416,636
Indian Corn..... "	3,635,528	2,047,040	2,037,741	-1,588,488	1,447,907
Oats..... "	628,205	2,644,233	.....	2,016,028	1,139,261
Pease..... "	10,208	2,399,608	30,949	2,464,854	1,971,789
Beans..... "		75,454	.....		65,266
Barley..... "	34,099	10,168,176	.....	10,091,651	7,429,604
Rye and other grain... "	42,426				
Flour of Wheat and Rye. Bbls.	376,114	419,936	4,432	43,822	2,205,467
Meal of all kinds..... "	153,690	64,756	795	-88,934	290,701
1877.					
Wheat.....Bush.	4,589,051	3,559,095	1,165,940	-1,029,956	4,102,210
Indian Corn..... "	8,260,079	4,083,174	4,081,662	-4,176,905	2,583,173
Barley..... "	369,801	6,587,180	241,483	6,217,379	4,721,455
Rye..... "	65,414	95,065	.....	29,651	65,163
Oats..... "	1,697,968	3,996,156	1,025,872	2,298,188	1,658,079
Pease..... "	8,669	1,753,439	7,522	1,864,870	1,509,214
Beans..... "		120,100	.....		119,737
Other grain..... "	635	3,928	.....	3,293	3,018
Flour of Wheat and Rye. Bbls.	551,032	276,439	7,834	-274,593	1,525,230
Indian meal..... "	294,342	1,499	291	-292,843	5,175
Oatmeal..... "	4,012	33,727	10	29,715	151,386
Other meal..... "	4,260	283	.....	-3,977	988
1878.					
Wheat.....Bush.	5,635,411	8,509,243	4,115,708	2,873,832	11,631,128
Indian Corn..... "	7,387,507	3,987,600	3,986,945	-3,999,907	2,678,289
Barley..... "	302,147	7,543,342	275,943	7,241,195	4,488,634
Rye..... "	146,823	452,420	36,595	305,597	279,169
Oats..... "	2,162,292	2,430,841	90,779	268,549	1,046,285
Pease..... "	9,589	2,420,049	5	2,481,759	1,984,115
Beans..... "		71,299	137		76,300
Other grain..... "	730	5,920	27	5,190	6,008
Flour of Wheat and Rye. Bbls.	316,403	479,245	2,814	162,842	2,757,688
Indian meal..... "	226,850	1,389	278	-225,461	4,609
Oatmeal..... "	3,005	174,511	.....	171,506	754,257
Other meal..... "	1,615	1,103	.....	-512	4,200

TABLE No. IV.—IMPORTS AND EXPORTS OF GRAIN, Etc.—*Continued.*

	Total imports.	Total exports.	Exports not produce of Canada.	Net surplus or deficit (-).	Value of total exports.
1879.					$
Wheat.....Bush.	4,768,733	9,767,555	3,156,831	4,998,822	9,748.795
Indian Corn..... "	7,617,421	5,429,359	5,427,530	-2,188,062	2,754,585
Barley ..... "	43,233	5,393,212	9,290	5,349,979	4,793,887
Rye..... "	74,238	641,694	770	567,456	364,479
Oats..... "	2,070,535	2,514,598	141,308	444,063	843,619
Pease..... "	2,343	2,715,252	257	2,712,909	2,056,079
Beans..... "	7,187	59,175	24	51,988	53,207
Other grain..... "	37	5,439	.....	5,402	2,399
Flour of Wheat and Rye. Bbls.	315,633	580,776	5,829	265,143	2,603,118
Indian meal..... "	221,488	1,200	368	-220,288	3,407
Oatmeal..... "	5,478	102,116	2,057	96,638	409,151
Other meal..... "	1,067	1,663	20	596	4,625
1880.					
Wheat..... .....Bush.	7,521,594	12,169,493	7,078,988	4,647,899	13,549.876
Indian Corn..... "	6,377,387	4,547,942	4,546,373	-1,829,445	2,184,212
Barley..... "	15,635	7,241,379	1,817	7,225,744	4,482,585
Rye..... "	18,636	970,463	12,643	951,827	712,223
Oats..... "	176,926	4,742,028	24,988	4,565,102	1,715,495
Pease .. .. "	2,979	3,819,412	22	3,816,433	2,977,545
Beans..... ..... "	6,466	75,214	23	68,748	76,986
Other grain ..... "	61	15,488	.....	15,427	6,246
Flour of Wheat and Rye. Bbls.	113,165	561,484	16,893	448,319	3,019,717
Indian meal..... ... "	172,446	1,367	894	-171,079	3,307
Oatmeal..... "	1,248	111,393	10,472	110,145	477,397
Other meal..... "	207	1,842	380	1,635	4,693
1881.					
Wheat .....Bush.	7,339,689	9,092,279	6,568,606	1,752,590	9,636,505
Indian Corn..... "	7,454,892	5,257,604	5,256,320	-2,197,288	2,615,744
Barley..... "	16,933	8,811,278	.....	8,794,345	6,261,383
Rye..... "	225	870,296	....	870,071	783,840
Oats... ..... "	84,934	2,926,532	... .	2,841,598	1,191,873
Pease ..... "	3,787	4,245,590	.....	4,241,803	3,478,003
Beans..... "	6,504	108,997	74	102,493	117,832
Other grain ..... "	91	2,887	....	2,796	1,457
Flour of Wheat and Rye. Bbls.	236,527	501,555	61,827	265,028	2,470,120
Indian meal.. ..... "	178,194	1,517	1,262	-176,677	3,997
Oatmeal..... "	959	54,480	655	53,521	236,191
Other meal..... ... "	240	544	....	304	1,742
1882.					
Wheat.....Bush.	2,931,220	6,433,533	2,588,498	3,502,313	8,152,610
Indian Corn..... "	3,918,031	2,229,900	2,229,851	-1,688,131	1,353,738
Barley..... . .. "	9,491	11,588,446	....	11,578,955	10,114,623
Rye..... "	1,447	1,281,678	....	1,280,231	1,191,119
Oats .... "	73,022	4,148,865	1,911	4,075,843	1,729,300
Pease..... "	3,641	3,521,496	3	3,517,855	3,191,874
Beans..... ..... "	12,709	95,643	27	82,934	197,687
Other grain..... "	105	187,760	.....	187,655	185,598
Flour of Wheat and Rye. Bbls.	200,858	508,120	38,381	307,262	2,941,740
Indian meal..... "	133,505	736	706	-132,769	2,473
Oatmeal..... ..... "	820	49,642	2	48,822	207,710
Other meal..... "	165	4,142	855	3,977	13,074
1883.					
Wheat.....Bush.	4,954,174	10,733,535	4,866,077	5,779,361	11,703,374
Indian Corn..... "	2,425,668	819,605	819,353	-1,606,063	586,020
Barley..... "	16,465	8,817,216	.....	8,800,751	6,293,233
Rye..... ..... "	45,377	1,093,112	45,303	1,047,735	744,613
Oats..... . ..... "	222,685	1,024,053	....	801,368	460,821
Pease..... "	2,353	2,339,287	.....	2,336,934	2,161,708
Beans..... "	23,732	142,429	7	118,697	212,530
Other grain ..... "	80	106,018	.....	105,938	59,435
Flour of Wheat and Rye. Bbls.	301,551	526,340	37,294	224,789	2,703,078
Indian meal..... "	130,545	279	231	-130,266	1,077
Oatmeal..... "	1,182	67,016	965	65,834	280,572
Other meal. ... . "	271	4,433	271	4,162	11,809

TABLE No. IV.—IMPORTS AND EXPORTS OF GRAIN, ETC.—*Continued.*

	Total imports.	Total exports.	Exports not produce of Canada.	Net surplus or deficit (-).	Value of total exports.
					$
1884.					
Wheat.....Bush.	3,604,442	3,021,188	2,275,662	-583,254	3,359,192
Indian Corn..... "	5,996,412	3,806,474	3,794,550	-2,189,938	2,485,846
Barley..... "	28,093	7,780,262	.....	7,752,169	5,104,642
Rye..... "	30,459	902,484	29,515	872,025	595,692
Oats..... "	242,615	1,431,744	85,024	1,189,129	534,196
Pease..... "	1,695	2,255,591	54,494	2,253,896	2,059,160
Beans..... "	15,496	55,924	5	40,428	92,721
Other grain..... "	68	90,576	.....	90,508	59,007
Flour of Wheat and Rye. Bbls.	565,376	284,504	87,115	-280,872	1,440,657
Indian meal..... "	129,239	367	316	-128,872	1,080
Oatmeal..... "	1,425	60,656	4,755	59,231	247,079
Other meal..... "	244	12,357	1,050	12,113	33,258
1885.					
Wheat.....Bush.	3,128,143	5,423,805	3,082,849	2,295,662	5,061,005
Indian Corn..... "	3,508,529	2,007,674	1,988,789	-1,500,855	1,293,862
Barley..... "	14,717	9,067,395	.....	9,052,678	5,503,833
Rye..... "	17,108	304,341	17,045	287,233	191,163
Oats..... "	314,922	2,367,605	8,603	2,052,683	896,739
Pease..... "	2,739	2,698,778	625	2,696,039	2,078,613
Beans..... "	15,099	193,620	18	178,521	185,897
Other grain..... "	26	55,455	.....	55,429	33,126
Flour of Wheat and Rye. Bbls.	565,655	161,054	37,277	-404,601	716,739
Indian meal..... "	122,449	483	369	-121,966	1,469
Oatmeal..... "	1,976	67,108	1,508	65,132	255,239
Other meal..... "	214	7,408	.....	7,194	19,377
1886.					
Wheat.....Bush.	2,373,230	5,705,874	2,286,706	3,332,644	5,190,424
Indian Corn..... "	4,528,878	2,667,401	2,666,907	-1,861,477	1,390,796
Barley..... "	8,212	8,554,302	.....	8,546,090	5,724,693
Rye..... "	18	170,764	.....	170,746	98,666
Oats..... "	220,001	4,215,329	65,341	3,995,328	1,478,435
Pease..... "	4,298	3,219,159	18	3,214,861	2,207,120
Beans..... "	7,240	156,171	83	148 931	156,309
Other grain..... "	23	89,711	.....	89,688	40,701
Flour of Wheat and Rye. Bbls.	215,507	415,397	29,298	199,890	1,875,979
Indian meal..... "	125,107	907	650	-124.200	2,305
Oatmeal..... "	1,406	79.409	3,483	78,003	320,908
Other meal..... "	182	7,097	705	6,915	21,888
1887.					
Wheat.....Bush.	3,550,844	9,127,045	3,495,319	5,576,201	7,859,538
Indian Corn..... "	5,304,639	3,373,764	3,371,257	-1,930,875	1,646,736
Barley..... "	5,053	9,456,964	.....	9,451,911	5,257,889
Rye..... "	4,589	124,427	.....	119,838	67,269
Oats..... "	42,669	2,048,240	.....	2,005,571	653,837
Pease..... "	5,719	3,975,771	.....	3,970,052	2,507,404
Beans..... "	6,630	198,467	149	191,837	207,625
Other grain..... "	322	68,303	.....	67,981	29,211
Flour of Wheat and Rye. Bbls.	174,488	531,152	10,939	356,664	2,366,472
Indian meal..... "	137,493	966	699	-136,527	2,188
Oatmeal..... "	1,205	48,062	.....	46,857	189,222
Other meal..... "	230	6,455	19	6,225	20,373
Yearly average for the several years ending Jun : 30, 1887:					
Wheat (15 years).....Bush.	5,035,661	7,884,087	3,599,032	2,848,426	8,854,929
Indian Corn (15 years).. "	5,617,311	3,464,519	3.396,443	-2,152,792	2,025,098
Barley (11 years)..... "	75,435	8,258,271	48,049	8,182,836	5,704,260
Rye (11 years)..... "	36,758	627,886	12,898	591,128	463,036
Oats (14 years)..... "	566,912	2,463,587	103,130	1,896,675	953,424
Pease (9 years)..... "	3,284	3,198,926	* 6,158	3,195,642	2,524,167
Beans (9 years)..... "	11,229	120,627	46	109,398	144,533
Other grain (11 years)... "	198	57,408	2	57,210	38,746
Flour of Wheat (14 yrs.) Bbls.	334,875	436,380	25,725	101,505	2,248,816
Indian Meal (11 years).. "	170,151	974	551	-169,177	2,826
Oatmeal (11 years)..... "	2,065	77,102	† 2,173	75,037	320,828
Other meal (11 years).... "	790	4,302	300	4,328	12,366

* In the Trade returns of 1884 there is an apparent error of entry of 54,492 bush. of pease exported as not produce of Canada, the total imports for the previous six years being only 16,798 bushels. † Similar apparent errors occur in exports of oatmeal.

EXPORTS OF THE DOMINION.

TABLE No. V.—Statement of the quantities and values of Exports the growth, produce and manufacture of the Dominion of Canada for the seven fiscal years ending June 30, 1887; also, the average prices of articles for each year, computed from the declared values.

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
THE MINE:								
Coal	tons	420,055	421,311	430,081	451,631	479,706	493,508	527,004
	$	1,123,091	1,078,704	1,087,411	1,201,172	1,468,166	1,416,160	1,522,272
	$	2.67	2.56	2.53	2.66	3.06	2.87	2.89
Gold bearing quartz, dust, nuggets, etc	$	767,318	930,151	911,383	952,131	999,007	1,210,864	1,017,401
Gypsum, crude	tons	130,961	130,062	154,809	155,851	116,415	107,237	148,533
	$	119,399	127,139	151,844	160,607	120,046	114,736	166,514
	$	.91	.98	.98	1.03	1.03	1.07	1.12
Oils, mineral, coal and kerosene	gals	2,456	662	1,422	327,563	954,966	260,449	310,667
	$	631	136	368	7,546	27,303	30,957	11,151
	cts	25.7	20.5	25.9	2.3	2.9	11.9	3.6
Ore:								
Antimony	tons	46	130	368	132	720	903	214
	$	3,921	4,733	11,842	4,855	33,700	38,320	12,110
	$	85.24	36.41	32.18	36.78	46.81	42.44	56.59
Copper	tons	19,802	44,744	4,402	1,677	1,257	5,224	5,267
	$	150,412	139,245	150,479	214,044	246,230	291,397	181,545
	$	7.60	3.11	34.18	127.64	195.89	55.78	34.47
Iron	tons	44,677	43,835	44,944	25,308	54,367	7,542	23,387
	$	114,850	135,463	138,775	66,549	132,074	23,039	71,944
	$	2.57	3.09	3.09	2.63	2.43	3.05	3.08
Manganese	tons	2,101	1,425	1,194	885	748	2,074	1,586
	$	38,738	37,485	29,417	15,851	22.790	45,608	60,162
	$	18.44	26.31	24.64	17.91	30.47	21.99	37.93
Silver	tons	.....	.....	100	37	31	81	40
	$	34,494	15,110	14,200	12,920	7,539	25,137	24,937
	$	.....	.....	142.00	349.19	243.19	310.33	623.43
Phosphates	tons	15,601	17,181	14,478	21,471	18,984	25,974	22,803
	$	239,493	327,667	302,716	453,322	362,288	431,951	396,449
	$	15.35	19.07	20.91	21.11	19.08	16.63	17.39
Salt	bush	253,555	381,476	197,185	181,742	107,523	384,493	106,643
	$	39,566	36,418	17,511	17,408	12,326	26,749	9,463
	cts.	15.6	9.5	8.9	9.6	11.5	7.0	8.9
Sand and gravel	tons	55,860	54,593	63,426	61,575	90,015	102,795	135,627
	$	12,511	13,789	17,755	14,152	23,590	23,195	23,207
	$	.22	.25	.28	.23	.26	.23	.17
Slate	tons	.....	420	148	864	377	282	48
	$	.....	8,100	3,043	11,445	4,642	4,552	1,300
	$	.....	19.29	20.56	13.25	12.31	16.14	27.08
Stone and marble unwrought	tons	28,189	39,339	26,578	12,954	15,736	15,259	12,205
	$	81,924	84,377	73,368	52,478	52,206	61,950	65,601
	$	2.91	2.14	2.76	4.05	3.32	4.06	5.37
Other articles	$	41,481	75,056	60,774	62,612	127,630	206,532	241,903
Total values	$	2,767,829	3,013,573	2,970,886	3,247,092	3,639,537	3,951,147	3,805,959
THE FISHERIES.								
Cod, including haddock, ling and pollock, fresh	lb	150,850	219,883	489,200	130,541	452,000	276,469	189,916
	$	3,170	4,135	14,846	4,749	3,746	1,786	4,344
	cts	2.1	1.9	3.0	3.6	0.8	0.6	2.3
do dry salted	cwt	943,304	872,423	725,334	850,582	847,703	761,222	819,716
	$	3,164,665	3,387,811	3,653,083	3,739,600	3,053.321	2,384,500	2,524,531
	$	3.35	3.88	5.04	4.39	3.60	3.13	3.08
do wet salted	cwt	2,330	9,942	23,792	25,932	32,773	12,715	1,534
	$	9,553	32,875	110,496	89,607	92,912	33,306	2,764
	$	4.10	3.30	4.64	3.46	2.84	2.62	1.80

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
THE FISHERIES—*Con.*								
Cod, including haddock, ling and pollock, pickled	bbls	770	478	1,562	1,337	589	97,307	340
	$	2,173	1,582	8,461	5,735	1,272	281,353	383
	$	2.82	3.31	5.42	4.29	2.16	2.89	1.13
do smoked	lb	12,200	19,510	28,078	5,770	.....	.....	.....
	$	453	1,233	2,000	223	.....	.....	.....
	cts	3.7	6.3	7.1	3.9	.....	.....	.....
Mackerel, fresh	lb	729,962	297,251	488,095	700,703	531,742	333,794	2,282,687
	$	22,355	13,039	18,372	29,589	9,017	13,916	42,495
	cts	3.1	4.4	3.8	4.2	1.7	4.2	1.9
do pickled	bbls	167,285	74,841	67,449	95,816	119,757	96,446	94,327
	$	794,194	453,113	520,335	876,797	802,942	509,374	657,729
	$	4.75	6.05	7.71	9.15	6.70	5.28	6.97
Halibut, fresh	lb	79,865	146,080	183,502	344,520	230,866	233,140	278,990
	$	4,095	6,851	12,161	12,311	7,358	13,266	11,382
	cts	5.1	4.7	6.6	3.6	3.2	5.7	4.1
do pickled	bbls	2	22	18	60	45	.....	.....
	$	12	132	92	519	240	.....	.....
	$	6.00	6.00	5.11	8.65	5.33	.....	.....
Herring, fresh	lb	4,960,561	4,811,799	1,409,050	1,097,786	1,556,105	3,446,036	14,653,937
	$	34,104	51,568	26,857	18,373	16,450	29,724	94,929
	cts	0.7	1.1	1.9	1.7	1.1	0.9	0.6
do pickled	bbls	85,624	98,007	123,883	137,370	151,169	69,256	69,592
	$	302,502	356,316	505,730	539,911	463,389	202,605	245,010
	$	3.53	3.64	4.08	3.93	3.07	2.93	3.52
do smoked	lb	8,464,526	10,730,637	8,452,529	7,859,948	10,442,712	5,493,806	5,961,543
	$	127,220	159,821	169,385	154,257	150,593	74,530	100,585
	cts	1.5	1.5	2.0	2.0	1.4	1.4	1.7
Sea-fish, other, fresh	$	3,070	1,562	150,264	211,369	30,300	44,605	46,661
do pickled	bbls	9,970	10,455	8,729	7,607	6,877	3,050	2,170
	$	46,328	39,453	41,078	33,573	26,246	11,695	10,453
	$	4.65	3.77	4.71	4.41	3.82	3.83	4.82
do preserved	lb	96,280	118,086	682	108,495	.....	6,940	39,398
	$	7,419	8,995	111	11,748	.....	221	1,242
	cts	7.7	7.6	16.3	10.8	.....	3.2	3.2
Oysters, fresh	bbls	451	360	412	542	525	2,686	949
	$	959	742	849	1,091	932	6,063	1,504
	$	2.13	2.06	2.06	2.01	1.78	2.26	1.58
do in cans	lb	.....	1,824	24	.....	15,071	1,216	.....
	$	.....	309	3	.....	918	283	.....
	cts	.....	16.9	12.5	.....	6.1	23.3	.....
Lobsters, fresh	bbls	399	2,922	5,107	10,103	20,687	32,077	31,996
	$	1,328	14,410	31,364	40,916	52,469	81,761	80,782
	$	3.33	4.93	6.14	4.05	2.54	2.55	2.52
do preserved	lb	13,295,502	14,809,152	15,106,980	10,818,187	14,584,890	14,094,572	12,772,577
	$	1,347,901	1,431,741	1,478,895	1,145,644	1,653,178	1,662,992	1,379,243
	cts	10.1	9.7	9.8	10.6	11.3	11.8	10.8
Salmon, fresh	lb	1,232,169	1,016,888	1,262,809	1,059,761	2,133,154	2,159,500	1,328,542
	$	125,378	139,053	180,563	152,035	223,249	219,518	141,524
	cts	10.2	13.7	14.3	14.3	10.5	10.2	10.7
do smoked	lb	4,028	4,487	8,743	15,867	8,411	5,238	1,396
	$	470	739	1,318	2,007	1,224	1,025	225
	cts	11.7	16.5	15.1	12.6	14.6	19.6	16.1
do canned	lb	2,842,183	7,488,020	10,977,223	7,348,417	5,040,940	4,087,223	5,335,019
	$	297,992	897,172	1,156,223	802,017	510,893	413,817	602,465
	cts	10.5	12.0	10.5	10.9	10.1	10.1	11.3
do pickled	bbls	3,821	6,589	6,143	4,774	7,330	5,327	4,990
	$	46,622	76,463	83,746	67,832	73,551	48,416	49,019
	$	12.20	11.60	13.63	14.21	10.03	9.09	9.82

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
THE FISHERIES—*Con.*								
Fish, all other, fresh	$	211,679	258,996	240,912	342,074	447,396	426,913	461,833
do pickled	bbls	1,028	3,987	6,488	4,959	2,696	1,801	3,818
	$	4,910	27,143	33,144	23,767	10,840	10,659	19,959
	$	4.78	6.81	5.11	4.79	4.02	5.92	5.23
Fish Oil:								
Cod	gals	184,052	214,240	228,762	260,150	175,734	98,041	30,343
	$	90,556	99,756	122,731	125,634	67,076	45,337	9,733
	$	.49	.47	.54	.48	.38	.46	.32
Seal	gals	4,963	44,205	3,003	6,013	777	.....	26,164
	$	2,443	17,727	1,622	3,464	459	.....	8,656
	$	.49	.40	.54	.58	.59	.....	.33
Whale	gals	10,347	10,876	1,800	9,771	5,417	6,426	.....
	$	4,802	5,151	723	4,342	2,447	2,664	.....
	$	.46	.47	.40	.43	.45	.41	.....
Other	gals	77,132	114,622	83,031	52,245	113,565	51,538	33,079
	$	22,735	38,660	32,089	20,229	47,263	15,746	8,591
	$	.29	.34	.39	.39	.42	.31	.26
Furs and skins of marine animals	$	105,246	79,688	145,042	87,828	179,242	231,910	307,732
Other articles	$	83,381	75,843	66,623	44,513	31,078	75,403	62,036
Total values	$	6,867,715	7,682,079	8,809,118	8,591,654	7,960,001	6,843,388	6,875,810
THE FOREST:								
Ashes, leached	$	10,215	17,308	49,994	21,161	16,613	16,106	18,675
do pot and pearl	bbls	10,149	11,109	7,801	7,495	5,959	5,543	4,770
	$	290,586	328,879	268,055	224,544	156,322	131,163	127,588
	$	28.63	29.60	34.36	29.96	26.23	23.66	26.75
Bark for tanning	crds	101,553	91,791	65,194	75,982	74,798	49,014	52,755
	$	481,758	431,562	321,991	399,598	364,053	221,815	235,787
	$	4.74	4.70	4.94	5.26	4.87	4.53	4.47
Basswood, butternut and hickory	m.ft	1,895	1,417	1,560	1,250	1,459	815	743
	$	36,581	32,858	36,167	29,951	26,474	18,611	15,043
	$	19.30	23.19	23.18	23.96	18.15	22.84	20.25
Firewood	crds	145,594	170,575	164,900	158,697	145,248	155,178	152,228
		312,170	367,484	388,910	353,829	316,647	313,480	311,931
		2.14	2.15	2.36	2.23	2.18	2.02	2.05
Hop, hoop, telegraph and other poles	$	159,594	205,054	227,191	181,046	84,789	106,745	92,697
Knees and futtocks	pcs	9,093	25,331	36,588	23,943	12,895	12,430	9,286
	$	8,102	26,213	33,660	18,691	9,619	6,031	7,156
	$	.89	1.03	.92	.78	.75	.49	.77
Lathwood	crds	1,324	578	501	466	455	214	218
	$	7,272	4,626	4,031	3,421	1,843	1,785	1,056
	$	5.49	8.00	8.05	7.34	4.05	8.34	4.84
Logs:								
Hemlock	m.ft	5,399	3,761	4,374	4,869	3,643	7,001	4,227
	$	14,452	13,122	20,814	19,639	14,890	28,885	17,592
	$	2.68	3.49	4 76	4 03	4.09	4.13	4.16
Oak	m.ft	3,784	5,019	1,820	2,225	1,151	1,190	388
	$	49,648	74,883	29,819	30,399	15,671	14,417	7,755
	$	13.12	14.92	16.38	13.66	13.62	12.12	19.99
Pine	m.ft	2,640	1,313	2,863	974	380	2,869	6,350
	$	20,276	16,001	18,812	8,012	2,300	24,452	49,242
	$	7.68	12.19	6.57	8.23	6.05	8.52	7.75
Spruce	m.ft	4,332	5,980	6,255	6,820	11,168	17,566	17,526
	$	15,584	22,681	30,858	31,793	49,474	82,016	88,773
	$	3.60	3.79	4.93	4.66	4.43	4.67	5.07

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
Logs—Continued.								
All other	m.ft	21,677	30,762	28,872	31,081	31,487	37,667	38,243
	$	96,114	156,448	162,249	140,027	143,523	164,195	183,276
	$	4.43	5.09	5.62	4.51	4.56	4.36	4.79
Lumber, viz.:								
Battens	pcs	43,408	46,183	24,296	24,242	.....	.....	.....
	$	10,693	10,739	4,591	4,244	12,640	10,979	6,695
	$	.25	.23	.19	.18	.....	.....	.....
Deals	st.h	260,305	263,594	266,068	286,214	211,604	244,977	249,972
	$	8,676,768	7,945,501	8,656,541	8,595,623	6,385,277	7,652,828	7,490,104
	$	33.33	30.14	32.53	30.03	30.18	31.24	29.96
Deal ends	st.h	10,793	10,101	12,125	12,774	9,828	10,982	11,465
	$	324,914	246,007	329,545	315,815	265,039	302,035	262,578
	$	30.01	24.35	27.18	24.72	26.97	27.50	22.90
Laths, palings and pickets	m	177,392	162,293	157,842	212,584	147,707	150,288	242,648
	$	180,754	208,781	230,637	351,460	270,227	258,259	343,931
	$	1.02	1.29	1.46	1.65	1.83	1.72	1.42
Planks, boards & joists	m.ft	652,621	699,777	632,148	670,701	655,900	585,203	580,827
	$	7,101,532	8,267,862	8,022,095	8,439,994	8,053,878	6,637,878	7,007,437
	$	10.88	11.81	12.69	12.58	12.28	11.34	12.06
Scantling	m.ft	19,118	20,137	15,607	16,361	15,631	18,104	13,995
	$	132,725	149,078	115,414	118,133	119,575	151,370	106,387
	$	6.94	7.40	7.40	7.22	7.65	8.36	7.60
Staves, standard	m	533	710	770	127	566	526	529
	$	107,470	108,958	95,696	42,113	13,705	14,521	14,698
	$	201.63	153.46	124.28	331.60	24.21	27.61	27.78
do other & headings	m	12,868	31,258	38,176	55,231	67,300	81,085	65,177
	$	102,863	185,059	250,953	291,562	345,796	330,686	277,718
	$	7.99	5 92	6.57	5.28	5.14	4.08	4.26
All other n.e.s.	$	45,982	88,506	91,941	158,877	201,907	357,344	587,356
Masts and spars	pcs	74,194	34,921	27,597	28,260	17,398	25,243	13,580
	$	54,595	35,520	44,197	45,530	42,691	37,454	28,652
	$	.74	1.02	1.60	1.61	2.45	1.48	2.11
Oars	prs	556	558	867	368	.....	.....	.....
	$	870	1,007	1,922	894	.....	.....	.....
	$	1.56	1.80	2.22	2.43	.....	.....	.....
Shingles	m	93,313	99,346	100,411	94,951	79,176	69,154	71,933
	$	188,444	238,585	283,530	207,984	183,732	142,347	151,128
	$	2.02	2.40	2.82	2.19	2.32	2.06	2.10
Shingle bolts	crds	1,168	1,516	637	721	756	271	503
	$	3,386	5,653	2,685	2,857	2,906	936	3,410
	$	2.90	3 73	4.22	3.96	3.84	3.45	6.78
Sleepers and railroad ties	pcs	3,651,955	2,743,848	2,126,668	1,429,319	760,435	1,358,398	1,797,260
	$	324,568	637,969	554,328	415,313	197,826	367,457	355,946
	$	.09	.23	.26	.29	.26	.27	.20
Stave bolts	crds	40,996	153,495	66,701	47,408	39,616	50,333	50,621
	$	100,574	160,376	211,484	132,183	97,863	116,900	121,263
	$	2.45	1.04	3.17	2.79	2.47	2.32	2.40
Sugar box shooks	No.	161,208	.....	99,884	51,975	58,110	806,558	992,904
	$	69,415	80,482	50,699	30,213	28,710	86,106	132,483
	$	.43	.....	.51	.58	.49	.11	.13
Timber, square, viz.:								
Ash	tons	9,302	7,706	8,202	9,098	8,452	7,119	3,600
	$	108,053	95,621	101,184	115,095	111,770	83,490	43,388
	$	11.62	12.41	12.34	12.65	13.22	11.73	12.05
Birch	tons	36,655	25,360	25,355	42,396	31,803	37,735	18,947
	$	255,826	170,081	194,345	301,204	246,031	265,273	132,936
	$	6.98	6.71	7.66	7.10	7.74	7.03	7.02

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
Timber—Continued.								
Elm	tons	28,905	17,465	22,830	16,303	18,028	19,667	10,223
	$	375,610	206,560	276,822	215,943	257,168	259,768	124,689
	$	12.99	11.83	12.13	13.25	14.26	13.21	12.19
Maple	tons	197	934	788	759	233	174	206
	$	2,280	12,838	9,977	8,383	3,001	1,799	2,298
	$	11.57	13.75	12.66	11.04	12.88	10.34	11.16
Oak	tons	67,161	37,629	47,802	44,201	29,366	36,492	20,896
	$	1,208,605	748,109	976,330	890,497	575,575	704,986	397,076
	$	18.00	19.88	20.42	20.15	19.60	19.32	19.00
Pine, white	tons	334,153	194,979	213,999	251,297	173,223	167,639	104,560
	$	3,524,317	2,188,845	2,852,908	3,168,236	2,019,310	1,750,529	1,331,033
	$	10.55	11.23	13.33	12.61	11.66	10.44	12.73
Pine, red	tons	37,445	21,704	25,843	26,605	13,477	16,897	9,868
	$	321,206	188,466	223,298	207,792	101,210	131,043	82,370
	$	8.58	8.68	8.64	7.81	7.51	7.76	8.35
All other	tons	9,809	8,409	6,294	6,342	6,482	3,235	2,688
	$	109,689	95,394	82,492	92,407	100,221	75,732	78,645
	$	11.18	11.34	13.11	14.57	15.46	23.41	29.26
Other articles	$	126,521	217,939	114,561	196,694	151,432	165,190	246,004
Total values	$	24,960,012	23,991,055	25,370,726	25,811,157	20,989,708	21,034,611	20,484,746
ANIMALS AND THEIR PRODUCE:								
Horses	No	21,993	20,920	13,019	11,595	11,978	16,525	18,779
	$	2,094,037	2,326,637	1,633,291	1,617,829	1,554,629	2,147,584	2,268,833
	$	95.21	111.21	125.45	139.52	129.79	129.96	120.82
Horned cattle	No	62,277	62,106	66,396	89,263	143,003	91,866	116,274
	$	3,464,871	3,256,330	3,898,028	5,681,082	7,377,777	5,825,188	6,486,718
	$	55.64	52.43	58.70	63.64	51.59	63.41	55.79
Swine	No	2,819	3,263	3,858	3,883	1,652	2,994	1,442
	$	11,841	10,875	12,281	14,243	7,283	7,588	5,815
	$	4.20	3.33	3.18	3.67	4.40	2.53	4.03
Sheep	No	354,155	311,669	308,474	304,403	335,043	359,407	443,495
	$	1,372,127	1,228,957	1,388,056	1,544,605	1,261,071	1,182,241	1,592,167
	$	3.87	3.94	4.50	5.07	3.76	3.29	3.59
Poultry, etc	$	133,963	149,804	161,229	192,908	175,475	126,162	107,909
Bones	cwt	60,194	63,135	53,546	57,528	59,203	141,508	82,570
	$	55,686	54,068	56,131	47,527	53,345	94,895	48,164
	$	.92	.86	1.05	.83	.90	.67	.58
Butter	lb	17,649,491	15,161,839	8,106,447	8,075,537	7,330,788	4,668,741	5,485,569
	$	3,573,034	2,936,156	1,705,817	1,612,481	1,430,905	832,355	979,126
	cts	20.2	19.4	21.0	20.0	19.5	17.8	17.8
Cheese	lb	49,255,523	50,807,049	58,041,387	69,755,423	79,655,367	78,112,927	73,604,448
	$	5,510,443	5,500,868	6,451,870	7,251,989	8,265,240	6,754,626	7,108,978
	cts	11.2	10.8	11.1	10.4	10.3	8.6	9.7
Lard	lb	209,679	135,169	51,203	214,772	63,559	95,790	159,248
	$	19,882	13,869	5,855	21,425	5,491	6,722	12,434
	cts	9.5	10.3	11.4	10.0	8.6	7.0	7.8
Furs	$	1,983,096	1,278,340	1,087,523	1,119,756	1,626,826	1,656,204	1,715,302
Hides, skins, horns and hoofs	$	432,498	375,565	460,983	435,898	601,111	469,087	593,624
Honey	lb	8,915	2,438	875	1,079	3,278	9,363	99,708
	$	1,163	316	107	178	440	1,096	9,770
	cts	13.0	13.0	12.2	16.5	13.4	11.7	9.8
Eggs	doz	9,090,135	10,499,082	13,451,410	11,490,855	11,542,703	12,758,532	12,945,326
	$	1,103,812	1,643,769	2,256,586	1,960,197	1,830,632	1,728,082	1,825,559
	cts	12.1	15.7	16.8	17.1	15.9	13.5	14.

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
Meats, viz.:								
Bacon	lb	9,785,089	9,758,027	3,736,724	7,546,807	7,189,260	8,143,503	11,030,689
	$	717,589	1,071,394	436,973	731,590	630,614	621,016	871,166
	cts	7.3	11.0	11.7	9.7	8.8	7.6	7.9
Hams	lb	569,598	615,947	517,636	571,163	962,827	422,987	395,253
	$	40,745	64,367	62,285	62,212	86,641	32,836	35,224
	cts	7.2	10.5	12.0	10.9	9.0	7.8	8.9
Beef	lb	1,372,809	749,742	628,728	423,915	542,209	533,353	450,706
	$	83,738	49,798	40,722	27,469	34,517	28.745	22,146
	cts	6.1	6.6	6.5	6.5	6.4	5.4	4.9
Mutton	lb	173,798	334,548	397,280	176,835	330,376	421,715	415,403
	$	8,814	18,732	22,826	10,990	18,731	22,146	20,756
	cts	5.1	5.6	5.7	6.2	5.7	5.3	5.0
Pork	lb	1,578,168	1,225,408	806,843	630,970	555,436	346,105	617,135
	$	113,694	93,621	69,969	44,518	35,269	18,911	36,538
	cts	7.2	7.6	8.7	7.1	6.3	5.5	5.9
Tongues	lb	68,916	72,316	32,596	8,106	131,498	117,132	81,144
	$	4,765	6,094	1,891	521	10,878	8,757	5,502
	cts	6.9	8.4	5.5	6.4	8.3	7.5	6.8
Venison	lb	7,352	8,340	11,525	60	.....	.....	.....
	$	364	431	648	5	.....	.....	.....
	cts	5.0	5.2	5.6	8.3	.....	.....	.....
Preserved n.e.s.	lb	1,040,251	1,286,005	1,770,774	1,793,249	499,187	892,863	1,293,475
	$	103,289	124,888	180,080	160,212	37,495	90,667	102,744
	cts	9.9	9.7	10·2	8.9	7.5	10.2	7.9
Sheep pelts	No	48,574	43,853	84,799	101,987	73,324	134,691	88,024
	$	13,201	10,664	18,157	28,740	20,515	28,901	24,071
	$	.27	.24	.21	.28	.28	.21	.27
Tallow	lb	855,327	942	3,864	136,521	62,624	68,700	28,266
	$	66,173	61	710	8,929	4.034	4,730	1,463
	cts	7.7	6.5	18.4	6.9	6.4	6.9	5.2
Wool	lb	1,404,123	1,053,305	1,375,572	1,501,031	989,925	1,524,184	1,416,238
	$	409,683	246,657	280,530	310,060	196,178	316,937	317,250
	$	.29	.23	.20	.21	.20	.21	.22
Other articles	$	41,711	56,466	51,885	60,744	72,007	59,957	55,698
Total values	$	21,360,219	20,518,662	20,284,343	22,946,108	25,337,104	22,065,433	24,246,937
AGRICULTURAL PRODUCTS:								
Bran	cwt	90,130	56,459	24,561	52,072	62,881	116,107	111,431
	$	52,241	39,590	21,806	46,637	46,677	64,513	73,788
	$	.58	.70	.89	.90	.74	.56	.66
Flax	cwt	6,286	6,509	11,634	5,312	7,060	7,286	10,128
	$	67,874	85,537	108,220	73,779	59,904	49,301	78,422
	$	10.80	13.14	9.30	13.89	8.48	6.77	7.74
Fruit, green, viz.:								
Apples	bbls	334,538	212,526	158,018	51,019	238,936	222,743	402,141
	$	645,658	540,464	499,185	173,048	602,260	477,004	852,890
	$	1.93	2.54	3.16	3.39	2.52	2.14	2.12
Other	$					32,980	22,594	18,298
Grain and products of, viz.:								
Wheat	bush	2,523,673	3,845,035	5,867,458	745,526	2,340,956	3,419,168	5,631,726
	$	2,593,820	5,180,335	5,881,488	812,923	1,966,287	3,025,864	4,745,138
	$	1.03	1.35	1.00	1.00	.84	.88	.84
Indian Corn	bush	1,284	49	252	11,924	18,885	494	2,507
	$	594	61	293	8,941	11,399	313	1,350
	$	.46	1.24	1.17	.75	.60	.63	.54
Barley	bush	8,811,278	11,588,446	8,817,216	7,780,262	9,067,395	8,554,302	9,456,964
	$	6,261,383	10,114,623	6,293,238	5,104,642	5,503,383	5,724,693	5,257,889
	$	.71	.87	.71	.66	.61	.67	.56

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
Grain—Continued.								
Rye	bush	870,296	1,281,678	1,047,809	872,969	287,296	170,764	124,427
	$	783,840	1,191,119	712,900	565,663	179,873	98,666	67,269
	$	.90	.93	.68	.65	.63	.58	.54
Oats	bush	2,926,532	4,146,954	1,024,053	1,346,720	2,359,002	4,149,988	2,048,240
	$	1,191,873	1,728,774	460,821	501,712	893,513	1,453,996	653,837
	$	.41	.42	.45	.37	.38	.35	.32
Pease	bush	4,245,590	3,521,493	2,339,287	2,201,097	2,698,153	3,219,141	3,975,771
	$	3,478,003	3,191,869	2,161,708	2,009,275	2,077,762	2,207,093	2,507,404
	$	.82	.91	.92	.91	.77	.69	.63
Beans	bush	108,923	95,616	142,422	55,919	193,602	156,088	198,318
	$	117,708	197,602	212,514	92,702	185,869	156,114	207,402
	$	1.08	2.07	1.49	1.66	.96	1.00	1.05
Other grain	bush	2,887	187,760	106,018	90,576	55,455	89,711	68,303
	$	1,457	185,598	59,435	59,007	33,126	40,701	29,211
	$	.50	.99	.56	.65	.59	.45	.43
Flour of wheat	bbls	439,728	469,759	489,046	197,389	123,777	386,099	520,213
	$	2,173,108	2,748,988	2,515,955	1,025,995	556,530	1,744,969	2,322,144
	$	4.94	5.85	5.14	5.20	4.50	4.52	4.46
Indian meal	bbls	255	30	48	51	114	257	267
	$	784	125	202	126	371	840	733
	$	3.07	4.16	4.20	2.47	3.25	3.27	2.75
Oatmeal	bbls	53,825	49,640	66,051	55,901	65,600	75,926	48,062
	$	234,150	207,698	276,574	230,294	250,319	309,631	189,222
	$	4.35	4.18	4.19	4.12	3.82	4.08	3.94
Other meal	bbls	544	3,287	4,162	11,307	7,408	6,392	6,436
	$	1,742	10,609	10,816	30,203	19,377	20,191	20,298
	$	3.20	3.23	2.60	2.67	2.62	3.16	3.15
Hay	tons	168,381	90,647	93,740	108,461	134,939	93,944	76,843
	$	1,813,208	915,691	902,105	913,057	1,270,525	1,001,336	743,396
	$	10.77	10.10	9.62	8.42	9.42	10.66	9.67
Hops	lb	10,500	201,767	177,142	117,266	103,438	136,577	705
	$	2,712	41,780	89,859	16,402	17,292	80,383	112
	$	.26	.20	.51	.14	.17	.59	.16
Malt	bush	708,771	1,171,580	1,329,958	235,959	374,961	284,443	182,176
	$	649,857	1,108,943	1,136,700	178,330	280,137	222,187	146,012
	$	.92	.95	.85	.76	.75	.78	.80
Maple sugar	lb	172,285	277,782	169,662	391,348	11,704	150,955	215,531
	$	14,616	20,864	12,358	25,018	1,016	10,870	15,769
	cts	8.5	7.5	7.3	6.4	8.7	7.2	7.3
Potatoes	bush	2,295,307	3,800,162	2,424,979	753,435	660,715	2,222,927	1,568,671
	$	830,218	2,268,769	1,048,954	231,716	234,812	492,702	439,206
	$	.36	.60	.43	.31	.35	.22	.28
Seeds, other	$	204,476	913,215	207,052	80,464	116,267	140,025	97,390
Tobacco leaf	lb	6,351	66,824	32,249	118	.....	.....	38
	$	2,332	6,337	6,469	25	.....	.....	12
	$	.37	.09	.20	.21	.....	.....	.32
Vegetables	$	67,745	195,435	91,887	92,280	75,062	64,006	83,639
Other articles	$	80,128	141,686	107,985	125,604	103,102	244,787	275,404
Total values	$	21,269,527	31,035,712	22,818,519	12,397,843	14,518,293	17,652,779	18,826,235
MANUFACTURES:								
Agricultural implements	$	31,269	46,142	16,766	17,252	22,640	16,658	48,060
Books, maps and pamphlets	$	31,321	23,223	45,551	105,486	155,511	86,677	118,884
Biscuits	cwt	3,981	4,919	4,437	3,927	4,176	3,359	2,795
	$	17,228	22,095	19,326	18,031	18,936	15,384	13,174
	$	4.33	4.49	4.36	4.59	4.53	4.58	4.71

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
MANUFACTURES—*Con.*								
Candles	lb	6,152	186	4,447	6,463	200	397	669
	$	836	29	685	1,109	47	65	117
	cts	13.6	15.6	15.4	16.1	23.5	16.4	17.5
Carriages, etc	No	789	426	293	318	285	361	455
	$	46,442	32,056	21,714	21,756	17,765	22,369	18,540
	$	58.35	75.25	74.11	68.41	62.32	61.96	40.75
Clothing (wearing apparel)	$	9,952	6,846	10,057	15,521	15,055	12,984	19,060
Cordage, etc	$	12,031	11,506	11,355	14,593	44,279	24,763	26,410
Cottons	$	1,540	1,372	11,565	10,931	37,191	20,632	10,146
Extract of hemlock bark	bbls	22,034	29,375	40,323	27,946	15,766	13,899	9,499
	$	190,068	234,908	305,418	361,156	203,211	167,017	136,077
	$	8.63	8.00	7.57	12.92	12.89	12.02	14.33
Furs	$	3,223	2,746	3,476	5,369	9,443	3,811	14,992
Glass and glassware	$	2,441	1,920	1,823	1,825	1,135	4,050	1,326
Grindstones	$	35,755	45,477	51,726	40,492	31,082	21,110	23,614
Gypsum (ground)	$	13,388	11,041	8,950	12,321	22,207	19,044	16,429
Hats and caps	$	108	1,639	914	655	736	375	169
India rubber	$	870	897	3,614	4,208	4,512	4,206	2,373
Iron:								
Stoves	No.	240	53	64	89	63	180	220
	$	3,309	1,035	798	1,554	878	2,960	4,109
	$	13.79	19.53	12.47	17.46	13.94	16.44	18.68
Castings, n.e.s	$	14,387	7,895	6,699	11,752	6,458	11,876	17,570
Pig	tons	11	65	14	3	.....	.....	.....
	$	179	1,000	317	66	.....	.....	.....
	$	16.27	15.38	22.64	22.00	.....	.....	.....
Scrap	$	191,210	120,493	46,482	26,576	3,797	46,117	63,924
All other and hardware	$	84,713	209,548	319,217	217,389	99,268	74,970	101,171
Junk and oakum	cwt	18,477	10,398	13,735	14,629	13,204	25,425	16,604
	$	35,177	30,846	34,963	32,574	32,408	37,696	29,391
	$	1.90	2.97	2.55	2.23	2.45	1.48	1.77
Leather:								
Sole and upper	$	416,902	426,403	271,140	296,186	419,749	257,153	440,616
Boots and shoes	prs	95,828	116,437	90,872	101,501	...	.....	.....
	$	101,727	117,868	96,815	109,430	70,199	68,534	61,952
	$	1.06	1.01	1.07	1.08	.....	.....	.....
Harness and saddlery	$	4,746	2,149	4,346	2,752	2,827	4,774	6,827
Other manufactures of,	$	4,986	5,918	121,982	110,374	20,605	28,129	72,356
Lime	$	4,691	7,579	11,112	10,402	11,005	18,638	41,342
Liquors, viz.:								
Ale, beer & cider	gals	56,802	42,450	18,641	19,305	5,103	4,774	2,655
	$	20,824	19,088	7,657	7,021	2,086	2,384	961
	$	.37	.45	.41	.36	.40	.50	.36
Whiskey	gals	2,513	7,056	14,515	8,054	10,630	9,133	5,386
	$	2,598	5,591	12,486	6,668	10,311	9,987	8,932
	$	1.03	.79	.86	.83	.97	1.00	1.66
Other spirits	gals	5,558	5,363	2,366	1,482	406	1,320	1,060
	$	3,931	3,287	2,722	1,796	775	1,756	993
	$	.71	.61	1.15	1.21	1.91	1.36	.94
Machinery, n.e.s	$	40,201	77,432	74,366	82,491	86,163	80,455	77,602

TABLE No. V.—EXPORTS OF THE DOMINION—*Continued.*

Articles.		1881.	1882.	1883.	1884.	1885.	1886.	1887.
Musical Instruments, viz.:								
Organs	No	306	965	459	1,114	2,007	2,139	2,837
	$	27,612	84,295	40.372	85,475	135,212	146,353	190,548
	$	90.24	87.35	87.96	76.73	67.37	68.42	67.17
Pianos	No	17	16	24	41	35	46	65
	$	3,480	2,865	6,768	11,215	8,830	13,035	16,571
	$	204.70	179.06	282.00	273.53	252.28	283.37	254.94
All others	$	133	3.874	1,629	1,399	463	3,366	220
Oil cake	cwt	18,790	16,217	8,701	4,310	12,305	24,401	45,772
	$	39,474	38,288	20,855	6,947	23,127	50,347	86,973
	$	2.10	2.36	2.40	1.61	1.88	2.06	1.90
Rags	$	49,044	35 800	30,820	12,799	11,634	5,947	9,346
Sewing machines	No	22,463	22,563	9,147	8,093	9,418	5,294	4,964
	$	165,452	150,643	69,933	95,326	69,235	35,627	34,345
	$	7.37	6.68	7.65	11.78	7.35	6.73	6.92
Ships sold to other countries	No	61	42	44	43	28	46	27
	tons	16,808	16,161	23,896	17,368	13,177	14,343	9,263
	$	348,018	402,311	506,538	416,756	246,277	266,363	143,772
	*$	20.71	24.89	21.20	24.00	18.69	18.57	15.52
Soap	lb	115,591	125,203	108,268	156,828	138,307	158,224	198,635
	$	4,370	5,020	3,957	6,855	5,419	8,502	7,304
	cts	3.8	4.0	3.7	4.4	3.9	5.4	3.7
Starch	lb	880,092	93,679	824,049	2,675,160	1,157,597	914,920	1,229,390
	$	32,691	4,621	25,360	69,097	25,795	22,442	26,750
	cts	3.7	4.9	3.1	2.6	2.2	2.5	2.2
Steel and manufactures of	$	143,656	96,266	43,812	30,781	30,323	24,093	48,704
Stone and marble, wrought	$	13,802	22,790	18,469	18,469	17,235	17,801	16,490
Tobaccos, viz.:								
Cigars and cigarettes	lb	36,288	950	122,942	553	320	2,095	2,936
	$	6,842	1,112	25,696	1,067	686	3,101	1,526
	$	.19	1.17	.21	1.93	2.14	1.48	.52
Stems and cuttings	lb	37,201	421,844	301,513	526,880	370,949	256,489	532,000
	$	1,425	12,750	10,207	14,974	8,079	6,237	8,540
	cts	3.8	3.0	3.4	2.8	2.2	2·4	1.6
All other, n.e.s.	lb	255,313	272,927	228,028	84,484	115,868	107,474	35,807
	$	36,536	53,289	38,134	14,883	25,957	22,159	7,647
	$	.14	.20	.17	.18	.22	.21	.21
Vinegar	gals	680	1,737	527	82	335	56	5
	$	266	498	148	26	83	18	4
	$	.30	.29	.28	.32	.25	.32	.80
Wood, viz.:								
Household furniture	$	100,387	106,854	133,932	131,705	169,115	225,023	243,894
Doors, sashes & blinds	$	22,280	39,997	22,147	59,645	46,678	33,070	35,200
Other manufactures of	$	291,657	354,043	384,796	430,345	470,206	379,498	294,118
Woollens	$	21,681	25,752	31,296	41,060	55,733	28,283	25,093
Other articles	$	440,236	410,491	564,309	580,975	481,135	468,298	505,810
Total values	$	3,075,095	3,329,598	3,503,220	3,577,535	3,181,501	2,824,137	3,079,972
MISCELLANEOUS:	$	622,182	535,935	528,895	560,690	557.374	604,011	644,362
Grand totals	$	80,922,579	90,106,614	84,285,707	77,132,079	76,183,518	74,975,506	77,964,020

* Per ton.

INTERNATIONAL COMMERCE: CANADA AND UNITED STATES.

TABLE No. VI.—Showing by quantity and value the exports of merchandise the growth or produce of Canada to the United States, and of merchandise the growth or produce of the United States to Canada, for the fiscal years 1886 and 1887.

Compiled from the Trade Tables of Canada and the United States respectively.

Articles.	Canada's Exports to United States.				United States' Exports to Canada.			
	1886.		1887.		1886.		1887	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
THE MINE:								
Coal—		$		$		$		$
Anthracite...tons	362,553	1,127,677	404,042	1,252,867	642,531	2,564,340	648,901	2,705,551
Bituminous.. "					298,683	751,895	426,743	1,055,367
Gold bearing quartz, dust, nuggets, etc.	.....	1,210,414	.....	1,017,401	.....	.....	.....	.....
Gypsum, crude..tons	106,737	112,271	148,325	165,497	.....	.....	.....	.....
Oils, mineral ...gals.	251,450	27,742	308,734	10,795	3,702,738	479,894	4,595,845	495,825
Ore, antimony..tons	2	3,000	40	1,200	.....	.....	.....	.....
" copper..... "	5,224	291,397	5,259	181,010	21	4,680	97	19,640
" iron ..... "	7,542	23,039	23,385	71,934	561	1,122	2,502	5,069
" manganese. "	281	13,001	863	47,266	.....	.....	.....	.....
" silver..... "	81	25,134	22	16,487	.....	.....	.....	.....
Phosphates .... "	532	6,817	733	6,223	.....	.....	.....	.....
Plumbago ..... cwt.	3,645	1,481	7,180	3,278	.....	.....	.....	.....
Salt ..... bush.	384,283	26,714	106,385	9,418	10,046	4,873	11,473	2,257
Sand and gravel.tons.	102,795	23,195	135,627	23,207	.....	.....	.....	.....
Slate..... "	260	4,256	26	420	.....	2,406	.....	5,310
Stone and marble— unwrought tons.	14,850	59,888	12,173	65,300	.....	139,314	.....	161,241
Other articles.	.....	159.670	.....	213,128	.....	.....	.....	.....
Total values..	.....	3,115,696	.....	3,085,431	.....	3,948,524	.....	4,450,260
THE FISHERIES:								
Codfish—including haddock, ling and pollock, fresh .. lb.	276,469	1,786	185,996	4,300	.....	.....	.....	.....
dry salted ....cwt.	153,271	406,332	157,788	399,388	571	3,423	410	2,290
wet salted.... "	12,715	33,306	1,207	1,994	.....	.....	.....	.....
pickled ..... "	25,064	71,062	254	254	.....	.....	.....	.....
tongues and sounds ....bbls.	1,304	40,393	478	16,363	.....	.....	.....	.....
Mackerel, fresh ..lb.	324,424	13,276	2,282,687	42,495	.....	.....	.....	.....
" canned. "	153,991	8,901	538,531	32,305	.....	.....	.....	.....
" pickled bbls.	60,867	372,709	79,311	573.968	75	475	6	56
Halibut, fresh ...lb.	233,140	13,266	278,990	11,382	.....	.....	.....	.....
Herring, fresh... "	3,446,036	29,724	14,653,937	94,929	.....	.....	.....	.....
" pickled bbls.	28,299	78,172	33,386	116,050	.....	.....	.....	.....
" smoked ..lb.	5,133,261	67,225	5,588,058	92,556	.....	.....	.....	.....
Sea-fish, n. e. s. fresh ....lb.	1,756,564	44,605	1,627,927	46,661	.....	.....	.....	.....
pickled .....bbls.	1,531	6,149	1,890	9,199	.....	.....	.....	.....
preserved .....lb.	6,150	145	39,582	1,265	.....	.....	.....	.....
Oysters	.....	792	.....	92	.....	105,323	.....	95,490
Lobsters, fresh.bbls.	32,077	81,761	31,996	80,782	.....	.....	.....	.....
" canned .lb.	4,644,515	499,779	3,312,138	338,988	.....	.....	.....	.....
Other shell-fish	.....	5	.....	1	.....	25,127	.....	18,526
Salmon, fresh....lb.	2,157,700	219,358	1,328,522	141,519	.....	24,435	.....	14,825
" smoked . "	4,853	979	1,268	185				
" canned.. "	148,875	15,351	161,675	22,863				
" pickled bbls.	3,422	32,225	3,266	33,061				
Fish, n. e. s .....lb.	.....	426,349	.....	461,688	853,386	26,205	425,420	11,995
" pickled...bbls.	1,576	9,935	3,691	19,320	528	3,984	248	2,099
" cured .....lb.	.....	.....	.....	.....	426,977	24,348	264,810	11,394

TABLE No. VI.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Export to United States.				United States' Exports to Canada.			
	1886.		1887.		1886.		1887.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$		$
THE FISHERIES.—*Con.*								
Fish oil, cod....gals.	12,813	3,933	8,585	2,569	.....	.....	.....	.....
" other.. "	46,420	13,332	34,730	9,263	11,425	9,504	583	234
Furs and skins of marine animals...	.....	79,215	.....	155,145	.....	.....	.....	.....
Other articles.	.....	17,423	.....	8,924	.....	.....	.....	.....
Total values..	.....	2,587,548	.....	2,717,509	.....	222,824	.....	156,909
THE FOREST:								
Ashes, pot and pearl..-.....bbls.	238	5,134	322	7,667	.....	.....	.....	.....
ashes, leached	.....	16,072	.....	18,661	.....	.....	.....	.....
" all other....	.....	14,766	.....	21,567	.....	.....	.....	.....
Bark for tanning.....cords	49,014	221,815	52,755	235,787	.....	297	.....	.....
Basswood, butternut and hickory ..m ft.	140	1,050	381	4,928	.....	.....	.....	.....
Firewood.....cords	155,087	313,214	152,141	311,715	2,677	8,342	1,544	4,720
Hop, hoop, telegraph & other poles.....	.....	106,665	... .	92,303	.....	45	.....	.....
Knees and futtocks.....pieces	5,800	5,446	8,979	7,016	.....	.....	.....	.....
Lathwood.. .. cords	.....	.. ...	160	480	.....	.....	.....	.....
Logs, hemlock..m ft.	6,881	28,076	4,206	17,447				
" oak..... "	1,163	13,660	388	7,755				
" pine..... "	2,869	24,452	6,350	49,242	.....	*101,498	....	*165,449
" spruce... "	17,541	81,874	17,526	88,773				
" all other. "	37,581	161,385	38,137	177,866				
Battens..... "	.....	6,571	.....	.....	.....	.....	.....	.....
Deals, pine..St. hd.	4	288	519	21,445	.....	.....	.....	.....
" spruce & other "	2,147	54,804	1,647	41,018	.....	.....	.....	.....
Deal ends..... "	25	399	33	561	.....	.....	.....	.....
Laths, palings and pickets .....m.	141,220	213,881	231,997	301,536	630	919	304	319
Planks, boards and joists .....m ft.	514,985	5,853,021	508,304	6,209,023	25,700	539,675	21,936	444,457
Scantling ..... "	8,709	66,487	6,553	50,895				
Staves & headings.m.	81,087	329,076	64,886	273,519	.....	39,521	.....	45,855
Lumber, all other...	.....	286,869	.....	475,106	.....	20,482	.....	9,506
Masts & spars..pieces	21,201	12,063	12,113	6,416	.....	.....	.....	.....
Shingles.....m.	55,197	116,182	63,004	136,905	10,819	14,299	7,138	7,514
Shingle bolts..cords	271	936	503	3,410	.....	.....	.....	.....
Sleepers and railroad ties.....pieces	1,337,292	261,405	1,779,985	335,274	.....	....	.....	.....
Stave bolts....cords	50,333	116,900	50,621	121,263	....	.....	.....	.....
Shooks, box.....No.	672,015	79,064	782,683	102,571	.....	44	.....	150
Timber, square—								
birch.....tons	106	828	43	262				
oak..... "	11	205	316	4,188				
pine, red..... "	24	271	345	3,032	.....	516,296	.....	392,219
" white.... "	270	2.226	.....	....				
all other..... "	319	1,916	268	3,195				
Other articles.	.....	148,405	.....	222,680	.....	.....	.....	.....
Total values..	.....	8,545,406	....	9,353,506	.....	1,241,418	.....	1,070,189

* Logs and other timber, n. e. s.

TABLE No. VI.—INTERNATIONAL COMMERCE—*Continued.*

Articles.	Canada's Exports to United States.				United States' Exports to Canada.			
	1886.		1887.		1886.		1887.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ANIMALS AND THEIR PRODUCE:		$		$		$		$
Horses.....No.	16,113	2,104,355	18,225	2,214,338	688	105,235	497	109,573
Horned cattle... "	25,338	633,094	45,765	887,756	441	18,749	1,541	59,073
Swine..... "	2,695	6,401	915	3,227	66,858	617,152	64,732	486,181
Sheep..... "	313,201	829,884	363,046	974,482	25,310	54,462	25,471	55,153
Poultry and other animals	.....	121,248	.....	98,919	.....	12,432	.....	17,535
Bones .....cwt.	140,889	94,235	82,162	47,857	.....	1,790	.....	756
Butter.....lb.	111,388	17,545	100,895	17,207	2,132,424	325,467	810,285	147,640
Imitation butter. "	.....	.....	.....	.....	38,564	4,535	15,399	1,323
Cheese ..... "	174,674	15,478	304,318	30,667	8,370,117	655,072	6,628,825	588,686
Eggs.. .....doz.	12,708,883	1,722,579	12,907,956	1,821,364	208,079	36,220	320,210	48,692
Furs, dressed.....	.....	10,205	.....	5,242	}	54,733	.....	39,339
" undressed.....	.....	296,090	.....	336,197				
Grease & scraps. lb.	30,938	724	52,845	1,656	.....	141,591	.....	115,354
Glue..... "	.....	.....	.....	.....	121,245	17,862	109,829	16,916
Hides, horns, etc....	.....	465,370	.....	413,148	.....	367,846	.....	353,029
Honey ..... lb.	1,568	150	11,310	1,045	.....	1,634	.....	2,324
Lard..... "	40	5	115	12	7,855,391	495,460	10,944,861	712,945
Lard oil.....gals.	.....	.....	750	455	23,432	10,909	48,383	22,399
Meats—								
Bacon..... lb.	368	37	133	17	3,952,486	283,535	15,158,558	1,145,513
Beef ..... "	67,592	4,802	40,380	2,262	27,175,248	1,764,377	7,256,121	463,864
Hams..... "	1,276	139	904	111	3,238,898	312,122	2,310,220	244,241
Mutton ..... "	343,466	18,459	347,854	17,745	141,505	6,745	60,608	4,151
Pork..... "	5,642	382	8,050	427	27,025,728	1,556,495	34,648,524	2,314,546
All other..... "	522,412	57,408	739,167	54,161	.....	.....	.....	.....
Sheep pelts .....No.	134,691	28,901	88,016	24,067	.....	.....	.....	.....
Tallow..... lb.	6,700	88	.....	.....	117,203	4,652	1,522,812	53,208
Wool .... "	1,316,228	271,424	1,297,867	288,251	2,041,246	465,719	144,765	45,566
Other articles.....	.....	43,786	.....	50,756	.....	28,312	.....	23,491
Total values..	.....	6,742,789	.....	7,291,369	.....	7,343,106	.....	7,071,498
AGRICULTURAL PRODUCTS:								
Bran .....cwt.	89,108	39,775	73,401	37,930	.....	.....	.....	.....
Cotton.... ..... lb.	.....	.....	.....	.....	18,712,718	1,882,273	23,951,878	2,405,292
Flax .....cwt.	7,286	49,301	10,128	78,422	.....	.....	.....	.....
Fruits—								
Apples ... bbls.	41,407	55,302	103,232	197,613	13,898	28,744	20,877	36,784
All other green...	.....	22,064	.....	14,724	.....	269,251	.....	236,254
Dried..... lb.	2,618	152	.....	.....	.....	.....	.....	105,922
Grain & products of—								
Barley .....bush.	8,528,287	5,708,130	9,437,717	5,245,968	17,223	11,352	7,353	4,194
Indian corn.. "	22	12	136	105	5,461,389	2,308,135	4,108,693	1,658,598
Oats..... "	240,159	75,817	40,342	12,210	239,302	70,231	90,567	28,033
Pease..... "	506,704	377,003	405,358	331,349	} 7,064	7,169	9,907	9,387
Beans ..... "	155,092	154,739	197,764	206,617				
Rye ..... "	164,324	94,158	26,030	12,350	.....	.....	280	130
Wheat ..... "	309,772	256,767	341,508	265,940	2,507,195	2,069,000	4,679,169	3,761,508
Other grain.. "	59,130	25,639	55,254	23,133	.....	.....	.....	.....
Wheat flour..bbls.	17,070	79,230	4,695	17,572	383,092	1,688,356	437,090	1,673,997
Oatmeal ..... "	4,398	15,680	1,064	3,805	34,439	139,357	28,374	117,858
Corn meal... "	6	28	1	2	117,896	310,575	130,482	323,171
Other meal .. "	415	857	2,933	8,101	44	170	56	186
Hay.....tons.	85,490	897,806	69,450	670,749	423	3,646	428	4,925
Hops..... lb.	7,675	480	.....	.....	126,558	11,647	118,646	21,471
Malt .....bush.	284,443	222,187	182,176	146,012	.....	.....	.....	.....
Rice ..... lb.	.....	.....	.....	.....	2,000	109	8,653	386
Broom corn.....	.....	.....	.....	.....	.....	83,091	.....	113,472

TABLE No. VI.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Exports to United States.				United States' Exports to Canada.			
	1886.		1887.		1886.		1887.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
AGRICULTURAL PRODUCTS.—*Con.*		$		$		$		$
Vegetable oils	.....	.....	.....	.....	.....	16,431	.....	36,272
Maple sugar .....lb.	137,755	9,741	212,077	15,377	.....	.....	.....	.....
Potatoes.....bush.	1,848,462	374,122	1,276,809	328,602	43,872	16,754	46,208	28,465
Other seeds .....lb.	.....	6,870	.....	3,756	4,081,171	346,888	4,726,845	345,768
Straw .....tons.	2,586	13,395	4,918	21,336	.....	.....	.....	.....
Other vegetables....	.....	49,828	.....	75,517	.....	87,404	.....	95,564
Tobacco .....lb.	75,430	3,521	68,206	3,480	7,808,929	1,070,054	5,902,747	1,250,630
Other articles.....	.....	224,063	.....	249,046	.....	170,883	.....	84,613
Total values..	.....	8,756,667	.....	7,969,716	.....	10,591,520	.....	12,342,880
MANUFACTURES:								
Agricultural implements	.....	5,434	.....	6,950	.....	121,492	.....	70,991
Books, pamphlets, maps, etc.....	.....	16,001	.....	19,103	.....	119,610	.....	163,450
Bread, biscuit, etc...	.....	.....	.....	.....	.....	19,651	.....	6,607
Brick and tile.....	.....	.....	.....	.....	.....	36,715	.....	40,550
Candles, etc.....lb.	397	65	349	65	78,886	8,337	86,740	7,525
Carriages, cars, etc.....No.	274	12,130	408	14,477	.....	339,863	.....	266,023
Clothing and wearing apparel.....	.....	7,933	.....	13,048	.....	.....	.....	.....
Cordage, rope, etc...	.....	2,238	.....	14,826	.....	123,030	.....	80,767
Cottons.	.....	7,860	.....	6,742	.....	650,400	.....	563,130
Earthenware & china	.....	.....	.....	.....	.....	76,455	.....	148,802
Extract of hemlock bark. ... ..bbls.	2,742	20,267	5	58	.....	.....	.....	.....
Fertilizers.....	.....	.....	.....	.....	.....	7,872	.....	13,640
Furs	.....	3,109	.....	4,665	.....	.....	.....	.....
Glass and glassware.	.....	1,631	.....	448	.....	257,809	.....	363,274
Grindstones	.....	20,602	.....	23,358	.....	.....	.....	.....
Gypsum, ground....	.....	18,485	.....	15,779	.....	.....	.....	.....
Hair mfrs	.....	.....	.....	.....	.....	10,656	.....	15,586
Hats and caps.....	.....	71	.....	155	.....	.....	.....	.....
India rubber.....	.....	2,362	.....	1,404	.....	139,066	.....	161,573
Ink	.....	.....	.....	.....	.....	11,929	.....	13,969
Iron and steel, manufactures of—								
Stoves.....No.	38	806	15	297	.....	13,813	.....	13,203
Castings.....	.....	5,005	.....	13,163	.....	91,977	.....	66,773
Machinery, other..	.....	25,187	.....	33,628	.....	432,413	.....	391,479
Sewing m'chns.No.	412	4,714	488	6,198	.....	108,245	.....	86,728
Scrap iron.....	.....	46,117	.....	63,822	.....	.....	.....	.....
All other iron and hardware.	.....	42,639	.....	51,504	.....	1,164,885	.....	1,153,020
Manufactures of—								
Brass.....	.....	.....	.....	.....	.....	44,506	.....	81,365
Copper.....	.....	.....	.....	.....	.....	27,080	.....	51,706
Lead	.....	.....	.....	.....	.....	13,096	.....	17,620
Tin	.....	.....	.....	.....	.....	38,893	.....	19,589
Zinc.....	.....	.....	.....	.....	.....	11,439	.....	2,534
Junk & oakum. cwt.	25,416	37,580	16,332	28,864	9,843	5,170	1,200	7,216
Leather, sole & upper	.....	858	.....	28,636	.....	49,498	.....	44,950
Boots & shoes...pairs	.....	4,207	.....	2,544	29,028	49,471	38,861	74,018
Harness and saddlery	.....	3,464	.....	4,053	.....	49,339	.....	30,212
Other leather mfrs..	.....	10,954	.....	9,326	.....	90,942	.....	106,640
Lime and cement ...	.....	18,552	.....	41,285	.....	25,047	.....	17,332

TABLE No. VI.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Exports to United States.				United States' Exports to Canada.			
	1886.		1887.		1886.		1887.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$		$
MANUFACTURES.—*Con.*								
Ale and beer....gals.	1,577	636	1,808	617	.....	42,222	.....	44,636
Whiskey..... "	2,357	4,928	4,607	8,289	12,981	11,414	7,064	7,701
Wine ..... "	78	136	58	99	.....	10,857	.....	18,429
Other spirits.....	1,010	1,452	59	72	27,971	15,608	18,708	8,881
Organs.....No.	29	2,241	39	2,880	255	24,747	210	14,258
Pianos ..... "	43	11,785	46	11,205	536	147,987	645	152,741
Other musical instruments.....	.....	3,286	.....	120	.....	11,355	.....	9,507
Oil cake.....cwt.	21,957	45,158	42,569	80,218	4,301	7,663	13,642	15,050
Rags. ..... .lb.	.....	5,347	.....	7,746	1,588,740	23.122	3,825,415	31,602
Ships .....tons	397	2,350	116	400	126	1,390	104	5,027
Soap.....lb.	7,030	236	1,340	170	454,106	36,061	114,977	15,205
Starch..... "	44,800	1,100	172,660	3,415	72,687	1,004	80,633	4,608
Stone and marble...	.....	15,461	.....	16,142	.....	86,919	.....	75,654
Silk	.....	.....	.....	.....	.....	11,562	.....	8,513
Spices	.....	.....	.....	.....	.....	7,657	.....	24,204
Straw mfrs.....	.....	.....	.....	.....	.....	6,731	.....	4,912
Trunks.	.....	.....	.....	.....	.....	8,366	.....	11,244
Varnish.....gals.	.....	.....	.....	.....	9,476	11,868	13,042	15,987
Sugar, refined....lb.	268	22	.....	.....	3,007,575	186,238	1,831,711	97,131
" glucose or grape..... .....lb.	.....	.....	.....	.....	74,061	2,078	40,149	1,478
Molasses and syrup.....gals.	.....	.....	.....	.....	44,269	17,560	50,627	18,067
Candy and confectionery.....	.....	.....	... .	.....	.....	12,369	.....	50,658
Cigars and cigarettes.....m.	*1,075	1,179	*610	193	3,994	15,015	2,899	25,614
Other tobacco ....lb.	1,730	603	2,311	720	.....	46,639	.....	24,445
Vinegar... . ..gals.	5	2	.....	.....	5,341	1,027	4,259	727
Household furniture.	.....	205,437	.....	203,512	....	409,948	.....	306,922
Doors, sash & blinds	.....	1,913	.....	1,664	.....	16,215	.....	15,042
Pails, tubs, etc.....	.....	1,829	.....	2,081	.....	27,643	....	50,820
Other woodenware..	.....	208,027	.....	179,594	.....	244,952	.....	283,148
Woollens.....	.....	5,739	..... .	3,027	.....	289,044	.....	219,864
Chemicals and medicines.....	.....	.....	.....	.....	.....	271,303	.....	389,492
Clocks and watches..	.....	.....	.....	.....	.....	28,576	.....	13,781
Coffee, cocoa, etc....	.....	.....	.....	.....	.....	18,061	.....	13,404
Gunpowder and explosives .....lb.	.....	.....	.....	.....	47,520	63,535	11,724	47,682
Brooms	.....	.....	.... ..	.....	.....	32,074	.....	35,658
Fancy articles	.....	.....	....	.....	.....	95,633	.....	98,071
Jewelry	.....	.....	.....	.....	.....	88,834	.....	109,395
Naval stores.....	.....	.....	.....	.....	....	57,866	.....	60,397
Paints and colors...	.....	.....	.....	.....	.....	52,404	.....	66,622
Paper and mfrs. of..	.....	....	.....	.....	.....	153,098	.....	172,055
Turpentine, spirits .....gals.	.....	.....	.....	.....	93,573	34,848	144,470	53,281
Stationery.....	.....	.....	.....	....	.....	27,548	.....	22,586
Other articles.....	.....	366,697	.....	359,022	.....	437,920	.....	429,344
Total values..	.....	1,203,835	.. ..	1,285,584	.....	7,238,660	.....	7,159,11[illegible]
MISCELLANEOUS	.....	551,351	.....	569,918	.....	58,233	.....	77,185
Grand totals	.....	31,503,292	.....	32,273,033	.....	30,644,285	.....	32,328,036

* Pounds.

INTERNATIONAL COMMERCE: CANADA AND UNITED STATES.

TABLE No. VII.—Showing by classes of products Canada's total imports from all countries, and her imports from the United States for the fiscal year ending June 30, 1887, together with the imports of the United States from Canada for the same period.

Compiled from the Canadian and United States Trade returns.

Articles.		Canada's Total Imports.		Canada's Imports from the United States.		United States' Imports from Canada.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
THE MINE:			$		$		$
Coal	tons.	2,296,468	7,638,687	2,222,244	7,498,802	332,942	1,153,604
Gypsum	"	1,557	2,492	1,557	2,492	145,487	160,571
Marble, unwrought		.....	84,086	.....	72,187	.....	.....
Oils—mineral	gals.	5,370,207	861,289	5,367,920	860,442	279,100	10,929
Ore—copper	tons.	.....	.....	.....	.....	1,918	188,329
iron	"	.....	.....	.....	.....	23,452	65,350
Phosphates	"	.....	.....	.....	.....	900	6,109
Plumbago	"	.....	4,020	.....	1,994	34	2,715
Salt	bush.	4,269,111	329,140	86,990	12,568	295,551	43,985
Sand and gravel	tons.	19,650	27,893	18,284	26,120	.....	.....
Stone, unwrought	"	10,365	65,334	9,965	64,125	.....	.....
Other articles		.....	403,660	.....	133,853	.....	24,938
Total values	1887	.....	9,416,601	.....	8,672,583	.....	1,656,530
	1886	.....	8,126,238	.....	7,389,746	.....	1,568,442
THE FISHERIES:							
Cod, fresh	lb.	1,802,942	48,690	1,772,042	47,793	9,816,617	237,179
" salted	"	2,089,100	64,238	603,800	29,636		
Halibut	"	60,295	3,880	59,095	3,868	.....	.....
Herring, fresh	"	463,415	2,725	3,415	125	.....	.....
" pickled	"	7,104,833	191,574	11,990	630	* 33,890	128,611
" smoked	"	11,528	579	10,630	543	5,347,090	76,803
Mackerel, fresh	"	23,567	2,121	23,567	2,121	.....	.....
" pickled	"	11,385	709	10,085	644	* 78,919	638,312
Other sea fish, fresh		.....	2,674	.....	2,664	.....	.....
" pickled		.....	9,070	.....	4,129	.....	.....
Oysters		.....	300,815	.....	300,815	.....	.....
Lobsters, fresh		.....	3,958	.....	3,925	.....	.....
" canned		.....	919	.....	919	.....	337,047
Salmon, fresh	lb.	2,184	282	2,118	274	1,104,090	106,553
" smoked	"	378	51	378	51	.....	.....
" canned		.....	39,206	.....	577	.....	44,693
All other fish, fresh	lb.	52,502	3,403	25,682	2,053	.....	892,212
" pickled	"	103,504	3,810	1,079	97		
" cured		.....	105,624	.....	43,213		
Fish oil	gals.	221,678	84,844	23,536	9,062	49,200	13,147
Furs and skins		.....	1,766	.....	1,766	.....	.....
Other articles		.....	8,631	.....	3,594	.....	.....
Total values	1887	.....	879,569	.....	458,499	.....	2,474,557
	1886	.....	858,114	.....	429,314	.....	2,040,980
THE FOREST:							
Ashes		.....	2,917	.....	806	.....	.....
Bark for tanning	cords.	322	2,860	322	2,860	60,587	272,956
Firewood	"	1,308	3,921	1,308	3,921	.....	.....
Logs		.....	336,886	.....	335,179	.....	.....
Lumber and timber—							
Oak	m. ft.	2,136	64,163	2,106	63,552	.....	.....
Pitch pine	"	2,360	47,033	2,360	47,015	.....	.....
Walnut	"	4,896	287,273	4,896	287,273	.....	.....
Planks, boards, deals, etc	"	.....	.....	.....	.....	558,963	6,841,001
Shingles	m.	7,869	8,091	7,869	8,091	89,167	185,378
All other		.....	193,251	.....	192,269	.....	814,186
Other articles		.....	79,342	.....	73,413	.....	1,617,910
Total values	1887	.....	1,025,737	.....	1,014,379	.....	9,731,431
	1886	.....	1,007,286	.....	996,189	.....	8,988,668

* Barrels.

TABLE No. VII.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Total Imports.		Canada's Imports from the United States.		United States' Imports from Canada.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$
ANIMALS AND THEIR PRODUCE:						
Horses ..... No.	3,082	520,578	2,573	269,750	25,525	3,430,594
Horned cattle ..... "	15,945	479,886	15,700	456,945	59,653	1,086,645
Sheep ..... "	39,037	91,606	38,913	89,318	450,175	1,215,437
Swine ..... "	6,228	37,587	6,213	37,256		
Poultry and other animals	.....	19,009	.....	18,231	.....	114,837
Bones ..... cwt.	702	964	683	817	.....	.....
Butter ..... lb.	246,272	51,733	246,272	51,733	234,756	37,864
Cheese ..... "	96,757	16,126	62,878	10,567	2,335	424
Lard ..... "	3,388,942	224,874	3,386,570	224,664	.....	.....
Furs	.....	1,105,124	.....	438,671	.....	845,565
Hides, skins, horns and hoofs	.....	1,963,314	.....	1,774,314	.....	474,996
Honey ..... lb.	23,858	2,556	22,792	2,436	.....	.....
Eggs ..... doz.	407,581	65,262	394,380	64,191	13,682,914	1,930,844
Meats:						
Bacon and hams ..... lb.	2,368,188	216,320	2,363,950	215,546		
Beef ..... "	1,803,400	74,317	1,793,853	73,683		
Mutton ..... "	62,605	4,202	62,605	4,202		
Pork ..... "	9,795,707	496,064	9,795,557	496,056	.....	123,788
Poultry and game	.....	15,377	.....	12,935		
All other	.....	90,128	.....	84,884		
Sheep pelts	.....	12,139	.....	2,759	.....	.....
Tallow ..... lb.	230,001	12,997	217,457	12,300	.....	.....
Wool ..... "	12,085,246	1,896,375	4,450,848	662,401	1,610,123	357,142
Oils ..... gals.	26,309	13,964	22,600	12,741	4,518	1,720
Grease and scraps ..... lb.	2,466,415	100,534	2,440,301	100,002	.....	.....
Silk	.....	144,735	.....	143,778	.....	1,083
Bristles ..... lb.	88,614	72,731	64,258	46,719	.....	.....
Hair ..... "	249,242	35,675	241,094	33,051	.....	12,091
Other articles	.....	85,776	.....	61,951	.....	1,092
Total values 1887	.....	7,849,953	.....	5,401,901	.....	9,634,122
Total values 1886	.....	7,363,443	.....	5,113,260	.....	8,447,080
AGRICULTURAL PRODUCTS:						
Bran	.....	35,885	.....	35,885	.....	.....
Cotton ..... lb.	33,227,256	3,081,424	32,662,659	3,051,180	8,264	508
Hemp, flax, jute, etc ..... cwt.	99,492	556,174	53,262	253,984	33,640	298,088
Fruit, green	.....	759,854	.....	563,125		
" dried	.....	742,198	.....	96,650	.....	376,049
" nuts	.....	176,627	.....	103,386		
Fruit trees	.....	42,164	.....	42,021	.....	.....
Other trees and plants	.....	40,617	.....	36,932	.....	.....
Coffee ..... lb.	1,905,410	288,994	696,085	103,709	350,560	51,488
Tea ..... "	18,532,073	3,422,830	534,870	88,011	1,619,896	314,697
Tobacco ..... "	11,490,315	1,305,743	11,379,152	1,270,656	419,450	222,345
Oils ..... gals.	1,375,773	514,658	364,883	92,569	1,497	558
India rubber, crude ..... lb.	785,040	443,382	780,891	440,448	.....	.....
Grain and product of—						
Barley ..... bush.	5,053	2,557	5,053	2,557	10,351,895	6,170,660
Indian corn ..... "	2,029,061	884,125	2,029,061	884,125	287	175
Oats ..... "	19,797	7,741	19,665	7,641	86,190	27,715
Beans ..... "	6,445	8,235	5,710	7,588	597,741	556,430
Pease ..... "	5,719	7,772	5,187	6,539		
Rye ..... "	4,589	2,539	4,589	2,539	18,468	10,718
Wheat ..... "	22,540	18,313	22,534	18,307	277,510	218,551
Other grain ..... "	322	235	44	27	.....	.....
Wheat flour ..... bbls.	169,629	638,618	168,124	630,592	1,001	3,237
Oatmeal ..... "	242,394	7,822	166,877	5,585	155	689
Cornmeal ..... "	136,137	310,864	136,137	310,864	.....	.....
Other meal	.....	4,083	.....	4,012	.....	.....
Hay ..... tons.	542	5,936	542	5,936	78,255	789,129
Hops ..... lb.	1,096,221	213,087	376,029	86,917	.....	.....
Malt ..... bush.	23,146	19,793	22,706	19,296	206,203	149,444
Rice ..... lb.	23,440,440	347,228	301,416	8,846	1,298,230	24,913

TABLE No. VII.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Total Imports.		Canada's Imports from the United States.		United States' Imports from Canada.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$
AGRICULTURAL PRODUCTS.—*Continued.*						
Seeds, n. e. s.		417,084		364,843		9,793
Potatoes bush.	60,672	35,869	60,634	35,837	1,228,405	339,163
Tomatoes "	13,040	23,728	13,040	23,728		
Other vegetables		142,087		114,087		91,639
Other breadstuffs—						
Arrowroot and tapioca lb.	642,228	26,268	87,589	4,093		
Maccaroni, etc. "	166,640	7,865	40,942	2,653		
All other		44,933		36,218		99,763
Broom corn		133,392		133,392		
Spices lb.	1,444,619	182,659	405,643	40,348	11,713	2,798
Other articles		62,444		56,424		20
Total values { 1887		14,965,827		8,991,550		9,758,570
Total values { 1886		15,810,994		9,373,884		10,615,963
MANUFACTURES:						
Agricultural implements		130,546		116,971		
Baking powder		96,475		96,470		
Bells		45,265		26,219		
Belts and trusses		21,775		15,120		
Blacking and harness dressing		54,130		41,928		
Books, pamphlets, maps, etc.		1,329,676		803,694		39,498
Book-binders' tools		41,679		14,171		
Boot and stay laces		35,210		9,149		
Bolting cloth		27,647		27,542		
Braces and suspenders		98,898		26,520		
Bread and biscuits lb.	631,687	27,333	589,143	25,081		
Brick and tile		156,043		96,009		
Brooms and brushes		117,520		42,404		172
Buttons		417,350		119,489		17,628
Candles lb.	318,301	35,629	126,772	14,565		
Candy and confectionery "	671,328	92,032	231,044	36,958		147
Carriages, cars, etc.		348,459		317,252		
Cement		158,303		11,877		407
Clocks and parts of		135,032		112,870		476
Coal tar, etc. bbls.	18,437	28,763	16,424	26,399		
Cocoa, chocolate, etc lb.	300,110	61,277	171,470	30,697		
Collars, cuffs, etc.		122,373		84,195		
Combs		78,911		24,483		
Cordage, rope, etc lb.	663,788	75,435	508,765	62,707		
Corks		65,052		46,310		
Cottons		5,472,529		917,861		4,188
Drugs, dyes, chemicals, etc		2,697,928		1,224,402		137,076
Earthenware and china		750,691		57,834		10,067
Electric and galvanic batteries		15,890		15,120		
Electric light apparatus		49,338		48,630		
Fancy goods		2,060,030		245,343		4,628
Fertilizers		6,988		6,729		70.757
Fishery supplies		322,430		163,539		
Flax, hemp, etc., manufactures of		1,678,148		63,515		8,425
Furs		145,432		20,774		10,442
Glass and glassware		1,269.288		488,038		2,710
Grindstones No.	1,309	14,815	1,289	14,382		
Gunpowder and other explosives		147,855		97,005		
Hair goods		50,978		24,847		98
Hats and caps		1,291,626		571,732		4,047
India rubber goods		807,540		563,323		2,834
Ink		71,467		49,083		
Jewelry		551,244		368,394		3,551
Junk and oakum cwt.	15,759	50,382	4,242	17,398		
Liquors—						
Ale and beer gals.	333,206	183,759	118,318	40,158	7,578	5,633
Brandy "	151,054	309,679	2,850	5,326	9,951	20,369
Gin "	390,313	134,976	1,687	1,101		

TABLE No. VII.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Total Imports.		Canada's Imports from the United States.		United States' Imports from Canada.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$
MANUFACTURES.—*Continued.*						
Whiskey ..... gals.	119,120	143,012	4,742	9,615	.....	.....
Wine ..... "	.....	507,938	.....	26,102	.....	18,846
Other spirits ..... "	.....	102,965	.....	27,569	15,810	15,179
Lime ..... bbls.	10,835	8,524	10,835	8,524	.....	.....
Leather	.....	932,831	.....	548,718	.....	39,515
Leather, manufactures of—						
Boots and shoes ..... pairs.	295,170	242,985	188,576	190,207	.....	18,092
Harness and saddlery	.....	37,952	.....	32,949		
All other	.....	458,744	.....	110,782		
Manufactures of—						
Iron and steel, viz.:						
Bars and ingots ..... tons.	50,979	1,296,154	1,741	99,521	.....	.....
Castings	.....	544,060	.....	282,423	.....	.....
Cutlery	.....	377,108	.....	46,497	.....	257
Hardware	.....	846,538	.....	723,260	.....	.....
Machinery	.....	1,329,633	.....	1,070,970	.....	14,209
Pig iron ..... tons.	50,214	631,808	10,022	208,992	31	500
Scrap ..... "	17,613	221,253	653	11,200	8,199	133,081
Sewing machines ..... No.	8,799	158,946	8,672	155,572	.....	.....
Steel rails ..... tons.	121,676	2,122,726	4,821	123,645	.....	.....
Stoves ..... No.	1,667	20,307	1,618	19,724	.....	.....
All other	.....	4,792,574	.....	1,395,754	.....	120,613
Brass	.....	480,631	.....	355,399	.....	2,953
Copper	.....	327,872	.....	184,517	.....	1,342
Gold and silver	.....	289,957	.....	170,392	.....	.....
Lead	.....	245,911	.....	22,836	.....	1,738
*Tin	.....	1,187,282	.....	271,685	.....	220,080
Zinc	.....	130,125	.....	11,301	.....	1,074
Other metals	.....	419,409	.....	259,844	.....	15,568
Musical instruments—						
Organs and parts of	.....	30,864	.....	28,346	.....	11,166
Pianos and parts of	.....	335,193	.....	314,716		
All other	.....	105,968	.....	36,683		
Mustard ..... lb.	500,265	68,541	231,896	17,353	.....	.....
Oils, volatile, etc. ..... gals.	95,215	73,429	78,705	51,673	941	3,144
Oil cake ..... cwt.	10,790	11,480	10,566	11,392	.....	.....
Oil cloth ..... yds.	1,196,055	290,487	461,862	106,176	.....	.....
Optical instruments	.....	76,424	.....	40,562	.....	.....
Paintings, statuary, etc.	.....	223,812	.....	87,934	.....	6,094
Paints and colors	.....	570,383	.....	143,456	.....	2,127
Paper	.....	1,216,795	.....	715,255	.....	2,696
Pencils	.....	66,379	.....	33,448	.....	.....
Perfumery	.....	41,216	.....	29,401	.....	102
Pickles	.....	152,698	.....	26,785	.....	.....
Printing presses ..... No.	278	91,174	256	71,711	.....	.....
Rags	.....	193,025	.....	152,378	.....	3,938
Resin ..... bbls.	21,137	80,360	21,057	80,143	.....	.....
Silk, manufactures of	.....	2,888,303	.....	123,573	.....	3,319
Ships and parts of	.....	27,131	.....	24,828	.....	.....
Soap	.....	97,679	.....	70,692	.....	260
Spices ..... lb.	270,009	16,287	217,746	10,826	15	3
Starch ..... "	711,302	39,160	393,317	21,289	.....	.....
Straw goods	.....	3,528	.....	1,126	.....	.....
Stone, wrought	.....	41,829	.....	20,765	.....	70,202
Slate "	.....	27,845	.....	24,223		
Marble "	.....	20,164	.....	18,246	.....	129
Sugar	.....	4,862,042	.....	396,511	.....	18,969
Syrup and Molasses	.....	619,554	.....	63,975	.....	20,120
Tobacco pipes	.....	130,419	.....	13,899	.....	102
Tobacco, manufactures of—						
Cigars and cigarettes ..... lb.	137,936	325,051	29,939	54,859	898	1,394
Snuff ..... "	8,746	2,015	8,711	1,973	.....	.....
All other ..... "	199,847	72,629	175,650	66,953	.....	7,946

* Including tin plate.

TABLE No. VII.—INTERNATIONAL COMMERCE.—*Continued.*

Articles.	Canada's Total Imports.		Canada's Imports from the United States.		United States' Imports from Canada.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$
MANUFACTURES.—*Continued.*						
Turpentine, spirits of ....gals.	430,859	173,002	430,845	172,990	.....	.....
Trunks, etc.	.....	114,587	.....	63,088	.....	.....
Twines, etc .....lb.	551,959	76,987	245,021	41,103	.....	.....
Varnish .....gals.	54,237	113,131	44,712	87,768	.....	.....
Vinegar ..... "	42,176	9,474	4,350	997	.....	.....
Watches and parts of	.....	443,385	.....	291,441	.....	178
Wax	.....	24,722	.....	21,309	.....	.....
Whips	.....	55,441	.....	50,280	.....	.....
Willow and rattanware	.....	38,024	.....	13,882	.....	.....
Wood, manufactures of—						
Household furniture	.....	222,030	.....	185,854	.....	42,150
Pails, tubs, etc.	.....	33,081	.....	32,882	.....	.....
All other	.....	509,338	.....	436,644	.....	95,721
Woollens	.....	11,814,519	.....	150,117	.....	33,908
Other articles	.....	2,187,973	.....	712,744	.....	63,146
Total values..... 1887	.....	68,358,629	.....	18,723,861	.....	1,333,014
Total values..... 1886	.....	60,082,191	.....	17,822,580	.....	1,386,697
MISCELLANEOUS:						
Settlers' effects	.....	1,469,796	.....	1,099,346	.....	1,679,237
U. S. products returned	.....	.....	.....	.....	.....	811,907
Canada's products returned	.....	24,583	.....	10,485	.....	.....
Supplies—						
Departmental	.....	684,146	.....	160,614	.....	.....
Army, navy and militia.....	.....	67,723	.....	4,634	.....	.....
Ships' stores.....	.....	81,486	.....	76,425	.....	.....
Other articles	.....	283,160	.....	181,631	.....	767,909
Total values..... 1887	.....	2,610,894	.....	1,533,135	.....	3,259,053
Total values..... 1886	.....	2,743,871	.....	1,693,678	.....	4,256,206
Grand totals..... 1887	.....	105,107,210	.....	44,795,908	.....	37,847,277
Grand totals..... 1886	.....	95,992,137	.....	42,818,651	.....	37,304,036

AGRICULTURAL AND HORTICULTURAL SOCIETIES.

TABLE No. VIII.—Statement of Receipts and Expenditure of Electoral Districts and Local Societies in Ontario for 1885, 1886 and 1887.

Schedule.	1885.			1886.			1887.		
	E. D. Societies.	Local Societies.	Totals.	E. D. Societies.	Local Societies.	Totals.	E. D. Societies.	Local Societies.	Totals.
RECEIPTS.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Balances in hand	12,228 04	19,363 27	31,591 31	13,910 63	20,210 72	34,121 35	13,485,81	20,300 89	33,786 70
Legislative grants*	58,650 00	30,423 33	89,073 33	59,350 00	30,527 21	89,877 21	60,050 00	30,536 67	90,586 67
Municipal grants	11,310 50	7,580 75	18,891 25	11,269 00	7,401 82	18,670 82	10,523 34	8,669 29	19,192 63
Subscriptions and donations	28,229 96	54,360 42	82,590 38	30,876 70	58,383 28	89,259 98	30,614 89	61,017 35	91,632 24
Rents of and admission to grounds	41,011 06	37,871 95	78,883 01	46,163 42	39,949 86	86,113 28	43,315 18	40,223 56	83,538 74
Sale of stock, seeds, etc	148 45	3,277 22	3,425 67	5,869 00	3,513 61	9,382 61	395 13	2,422 17	2,817 30
Moneys on loan	7,067 85	4,465 90	11,533 75	1,878 72	3,441 00	5,319 72	13,469 57	12,584 11	26,053 68
From other Societies for union exhibitions	8,069 55	2,745 59	10,815 14	7,477 16	1,763 62	9,240 78	6,407 75	585 20	6,992 95
Miscellaneous and minor receipts	5,512 19	5.889 73	11,401 92	3,972 06	7,688 08	11,660 14	15,380 99	3,514 82	18,895 81
Total receipts	172,227 60	165,978 16	338,205 76	180,766 69	172,879 20	353,645 89	193,642 66	179,854 06	373,496 72
Balances due treasurers	1,486 71	2,466 45	3,953 16	3,041 99	3,346 47	6,388 46	1,904 89	3,565 94	5,470 83
	173,714 31	168,444 61	342,158 92	183,808 68	176,225 67	360,034 35	195,547 55	183,420 00	378,967 55
EXPENDITURE.									
Balances due treasurers	2,717 68	1,536 86	4,254 54	1,758 95	2,106 34	3,865 29	3,002 29	3,290 35	6,292 64
Legislative grants to local societies	29,168 82	....	29,168 82	30,056 47	.....	30,056 47	30,039 00	.....	30,039 00
Prizes for animals and dairy products	53,066 84	67,612 21	120,679 05	44,413 59	55,339 00	99,752 59	44,551 69	55,090 18	99,641 87
Prizes for field, orchard and garden products				11,279 20	16,773 94	28,053 14	11,138 91	16,010 55	27,149 46
Prizes for manufactures	13,462 99	16.145 75	29,608 74	6,311 06	6,538 40	12,849 46	5,055 60	5,554 51	10,610 11
Prizes for fine arts, ladies work, etc				8,779 73	9,934 02	18,713 75	9,913 59	11,257 30	21,170 89
Prizes for previous years paid	3,121 24	2,652 32	5,773 56	1,597 49	2,418 76	4,016 25	1,293 82	2,119 32	3,413 14
Grants to union exhibitions	9,961 45	8,617 90	18,579 35	11,644 20	9,213 29	20,857 49	12,060 54	8,921 82	20,982 36
Buildings and grounds, interest, insurance, etc	23,089 84	22,801 75	45,891 59	29,033 90	24,008 63	53,042 53	31,976 02	30,585 10	62,561 12
Purchase of machinery, stock, seeds, etc	221 70	4,349 54	4,571 24	51 35	3,623 85	3,675 20	90 70	2,985 57	3,076 27
Meetings, periodicals, prize essays, etc	263 00	122 00	385 00	216 44	559 30	775 74	180 00	676 70	856 70
Working and miscellaneous expenses	24,705 95	24,513 09	49,219 04	25,175 07	24,588 78	49,763 85	35,901 72	27,887 93	63,789 65
Total expenditure	159,779 51	148,351 42	308,130 93	170,317 45	155,104 31	325,421 76	185,203 88	164,379 33	349,583 21
Balances in hand	13,934 80	20,093 19	34,027 99	13,491 23	21,121 36	34,612 59	10,343 67	19,040 67	29,384 34
	173,714 31	168,444 61	342,158 92	183,808 68	176,225 67	360,034 35	195,547 55	183,420 00	378,967 55

* On this item see explanatory remarks on page 18.

ANNUAL REPORTS

OF THE

DAIRY ASSOCIATIONS OF ONTARIO

FOR THE YEAR 1888.

I. CREAMERIES ASSOCIATION OF ONTARIO.

II.—DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO.

III.—DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO.

Printed by Order of the Legislative Assembly.

Toronto:

PRINTED BY WARWICK & SONS, 26 AND 28 FRONT STREET WEST.

1888.

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I.—ONTARIO CREAMERIES ASSOCIATION.

OFFICERS OF THE ASSOCIATION.

President ..... D. Derbyshire, Brockville.

1st Vice-President ..... J. T. Brill, Guelph.

2nd Vice-President ..... R. J. Graham, Belleville.

Secretary and Treasurer ..... James Cheesman, Toronto.

Executive Committee:

D. Derbyshire. | John Leys, M.P.P.

J. T. Brill. | Valancey E. Fuller.

Prof. J. W. Robertson.

Board of Directors:

Division No. 1.—W. D. Rutherford, Iroquois.

Division No. 2.—Ira Morgan, Metcalfe.

Division No. 3.—James Miller, Spencerville.

Division No. 4.—John Sprague, Ameliasburgh.

Division No. 5.—George Garnett, Bethany.

Division No. 6.—John Leys, M.P.P., Toronto.

Division No. 7.—W. H. Brubacher, St. Jacobs.

Division No. 8.—Valancey E. Fuller, Hamilton.

Division No. 9.—J. D. Moore, St. Marys.

Division No. 10.—Aaron Wenger, Ayton.

Division No. 11.—Erastus Miller, Parkhill.

Division No. 12.—Peter Graham, M.P.P., Warwick West.

Division No. 13.—John Hannah, Seaforth.

MEMBERS OF THE CREAMERIES ASSOCIATION.

Name.	Post Office.	Name.	Post Office.
D. Derbyshire	Brockville.	P. A. Carpenter	Collingwood.
M. Moyer	Georgetown.	R. J. Graham	Belleville.
Erastus Miller	Parkhill.	J. T. Brill	Guelph.
John Sprague	Ameliasburg.	S. R. Brill	Teeswater.
W. J. Armstrong	Guelph.	S. Diamond	Barrie.
John Hannah	Seaforth.	A. Wenger	Ayton.
Robert McCartney	Brucefield.	Fred. Filsinger	Mildmay.
Thomas Johnston	Toronto.	W. T. Pattulo	Alton.
James F. Ross	Seaforth.	Henry Groff	Elmira.
C. R. Cooper	Toronto.	A. Hagar	Plantagenet.
Aaron Shantz	Haysville.	W. H. Lowes	Bethany.
Aaron Good	Blair.	W. H. Brubacher	St. Jacobs.
Campbell Bros.	Penetanguishene.	Geo. Wettlaufer	Amulree.
G. S. Fraser	New York,	James Cheesman	Toronto.
J. N. Zinkann	Wellesley.	James Vance	Roseville.
John W. Thompson	Norway.	Alfred Boyd	Toronto.
Geo. Garnett	Bethany.	J. E. Baillie	Toronto.
John Ramsay	Eden Mills.	W. Baillie	Selkirk.
James Miller	Spencerville.	James Murdoch	Yeovil.
Peter Graham, M.P.P.	Warwick.	John Keith	Blake.
Valancey E. Fuller	Hamilton.	Arch Wark	Wanstead.
John W. J. Shannon	Seaforth.	W. R. O. Brown	New Hamburg.
Rosa L. Leigh Spencer	Eglington.	John Philip	Dromore.
Nesbitt Bros	Woodstock.	A. D. Browning	Armow.
Jas. R. Kidd	Warsaw.	J. A. Browning	Ripley.
J. M. Gibbs	Parkhill.	Ernest Lambert	Harriston.
J. G. Lenier	Wellesley.	W. G. Oliver	Whitechurch.
Geo. Braun	Meaford.	Lawrence, Carpenter & Co.	Collingwood.
F. C. Rogers	Brussels.	J. Critchley	Chatsworth.
Creamery Co	Whitechurch.	J. F. Agnew	Owen Sound.

MEMBERS OF THE CREAMERIES ASSOCIATION.—*Continued.*

NAME.	POST OFFICE.	NAME.	POST OFFICE.
J. Struthers	Owen Sound.	Lucas Fee	Toronto.
Ed. Mainprize	Ripley.	James Dickson	"
R. J. Whitefield	Ayton.	J. H. Spaulding	Cranbrook.
Wm. Herbison	Clinton.	Herman Rhuenstadler	Amulree.
James Park	Toronto.	W. H. Hunter	Guelph.
A. Delaporte	"	J. C. Gilpin	St. Marys.
R. Swan	"	W. D. Rutherford	Iroquois.
R. H. Ramsay	"	F. C. Rodgers	Holstein.
John Hawley	"	Thos. Munroe	Inkermann.
L. Gibb	"	R. Dickson	St. Marys.
J. W. Flavelle	"	John James	Toronto.

THIRD ANNUAL CONVENTION

OF THE

ONTARIO CREAMERIES ASSOCIATION.

The Convention was called together at 11 a.m., in the Town Hall in Guelph, on January 17th, by the first Vice-President, Mr. D. Derbyshire, of Brockville. A Committee on Order of Business was appointed to draft a programme for the proceedings of the Convention, and the Convention adjourned till 2 p.m.

At 2 p.m. Mr. Derbyshire called the meeting to order, and said :—This Association was formed, as you know, for the purpose of improving the quality of the butter made in this Province of Ontario. That was the great idea. We had a grant of $500 placed in the estimate of the Ontario Government for the purpose of encouraging the creameries in this Province. You are aware of the position we have occupied during the last few years in regard to our butter. It is a disgrace to us. Anybody travelling in Canada and stopping in hotels, will necessarily notice the peculiar flavour of our butter. (Laughter.) The object of this Association is to improve this condition of affairs, to build up large creameries in the various sections where we have no cheese industries at the present time, and to place in the market butter that will pay for its manufacture. Our butter trade has been taken out of our hands. Only a few years ago we had a fairly good trade, but competition and the establishment of large creameries on the other side have taken it from us. I think it is a great mistake at this time not to energetically take hold of this matter and carry on the good work.

Messrs. V. E. Fuller, J. T. Brill, John Sprague, R. J. Graham and James Miller were appointed a nominating Committee, after which the following paper was read by Mr. John Sprague :—

THE SILO AND ENSILAGE.

Before introducing the subject to the members of this Convention, I wish to remark : First, that in past discussions our attention has been largely occupied with the best methods of getting cream, of making butter, best breeds of cattle for the dairy, etc.

Those subjects, although of great importance, are not the foundation of success in our branch of industry. Without cheap, good feed, and plenty of it, we cannot expect to receive a profitable return from our labour. Ensilage for feeding has now passed the experimental stage, and has been adopted by so many farmers, that it may now be considered an established fact. The rapid growth of this system, and my own experience proves, to me at least, most conclusively that the silo is destined soon to replace the old unsatisfactory method of feeding. The growth of this system in England and America has been marked with rapid development. In 1880, ten silos was the number in use in these two countries. In 1885 the number had increased to 3,190, and I now estimate from best information attainable that the number has increased to 10,000 in practical use. There is one fact I desire to keep before the minds of this Convention, that is—the

future success of our industry in this country more largely depends on good, cheap and abundant food supply than any other subject under our consideration. By the use of properly constructed, properly filled silos, it is no longer necessary that our cattle should be allowed to lose in condition during the winter, to come out so thin and emaciated in the spring that one half of the following summer is required to get them in condition again. To my own mind, ensilage is sure to revolutionize dairying and become a necessity to the farmers of this country, and here I strongly urge your careful consideration and early adoption of this and other improved systems of feeding.

My observations lead me to believe that we, in the older counties of Ontario, are on the eve of a mighty change. That change will be in the ownership of our farms, or in a rapid change in our method of farming. The West, with its new virgin soil and easy tillage, has now driven us far from growing grain at a profit.

To the business man the day of wooden ships and stage coaches has passed; we, as practical farmers, should be quick to abandon that which has not been a paying system in the past and ready to adopt something better. That something better is, in my opinion, corn feed and the silo, aided by permanent pasture. By the use of this system of storing and feeding ensilage, the capacity of our farms can be largely increased. We can make our best butter and beef in the winter when both are in best demand and bring the highest price. There are several comparative points which we could with profit discuss, but in a short address like this it is not convenient to do so. I suppose most of you have given this subject more or less attention; in a word, you have the theory. I hope and expect you to put your theory into practice; do not wait to see how Mr. A's or B's silo pans out, life is too short. A season passed cannot be recalled.

I will not further occupy your time in speaking on the outlines of this system, presuming you prefer getting a somewhat plain statement of our own practical experience, and will here remark, that after carefully studying the method, I decided last spring to grow corn and construct silos. We selected a field of thirteen acres near our barn building for growing the corn; planted three acres of this field to field-corn as usually planted; also planted ten acres with southern red-cob sweet, or silo corn. Planted the latter with two-horse drill, in rows $3\frac{1}{2}$ feet apart; used on $3\frac{1}{3}$ acres $1\frac{1}{4}$ bushels to an acre; on $3\frac{1}{3}$ acres, 1 bushel to an acre; on $2\frac{1}{3}$ acres, $\frac{3}{4}$ bushel to an acre. Planted 1st June; as soon as the corn was nicely up I cultivated once, and in ten days cultivated again. Used a two-horse cultivator; time used in planting and cultivating (man and team), three days—one day planting and two days cultivating. We harvested about the 15th of September; cut the corn with a Royce reaper, doing one row at a time. We estimate the yield from the thirteen acres at 130 tons green feed. We fed our stock from the field as needed, the balance was put in silos. We found, after the siloed feed had cured and settled, we had, by actual measurement, 81 tons, allowing 45 feet to the ton. We have now been feeding this feed since 12th November; are feeding ten milch cows, fourteen young cattle and two colts. We are more than pleased with it; our cows are giving a good flow of milk, and the other stock are doing finely. We value this feed as worth to us $7 per ton now. To construct silos for convenience and cheapness we used the ground or bay-mow of barn, excavated five feet below floor, built up with stone wall fifteen feet high, plastered inside and bottom with water-lime. The inside measure of our silos, 13 feet and 4 inches by 14 feet, 15 feet deep, with doors to enter level with barn floor. We find our silos convenient to fill, also convenient for feeding. There has been much said about construction, filling and weighting of the silo. I need not comment on the different constructions or the best kinds of silo feed; I will only say, that in my opinion, good silos can be made with any kind of building material. Can be built above ground, underground or partly both. The main point in construction is the exclusion of air and frost. The feed used to fill silos, if grass, Indian corn or clover, should be well matured—at extremity of growth when cut. Presuming my subject has been sufficiently brought to your notice, that sufficient has been said to bring out further and fuller discussion, before resuming my seat I wish to add my testimony to the many already given in favour of silo and siloed corn feed, as by the adoption of this system on our farm the past season, we now find ourselves comfortably and plentifully provided with the best of feed for our stock, and this, too, in the face of one of the most trying years in the memory of any present.

Mr. Fuller.—Our President here is not noted the world over for modesty, and when he had given me a whole evening to myself on another subject, I hardly expected to be called upon to speak on this. Inasmuch as I am a firm believer in ensilage, having had an experience of it lasting over four years, I have great pleasure in adding my meed of praise to what has already been said by Mr. Sprague. He must have had a very unfortunate year, or else he could not have had the ground that produces the best results, or I don't think he would have estimated the return at ten tons to the acre, and if he will put it at twenty tons to the acre he will be more in accord with our experience. We carry at our place 250 head of stock, outside of sheep or horses. I speak of cows and calves, and if we had not had ensilage to depend on, the cost of maintenance would have exceeded the production of these animals at the pail and in the churn. It would take at least a ton or a ton and a half of hay per day to keep our stock, yet the product of forty-five acres last year kept our entire cattle stock from the frosts until the pastures in the spring. I must correct Mr. Sprague in his estimate that two tons of ensilage are worth a ton of hay. The experience of most people is against that, but I have had it so that three tons of ensilage are worth two tons of hay. It is certainly a most economical food when you consider that it increases the flow of milk and gives it a better colour. I have heard it contended that it will give a taste to the cream and butter, but I don't believe there is any justification for that statement, and it is against our experience. It is true we don't cut our ensilage just previous to the time of feeding, but earlier in the day, and we never found any difficulty from this source. Our practice is, in place of planting corn in rows thirty-six inches apart, we plant it at eighteen, and even then we are taking off two crops a year. Rye in the fall. Pastured that down with cattle. Cut it early in the spring, early enough to be put away for use during the period of dry weather in August and September. Manured the land in the winter. Manured it again in the spring, and have planted that same ground with ensilage corn, and taken off a crop of ensilage corn in the fall. Last summer we took off a large quantity of rye, intending that as food during the drought. Finding that the drought continued during the whole year, we retained it and are using it to-day with good results. We have also had some experience in using clover, and have found it very satisfactory. It is unnecessary to go to the great expense, which is advocated by some, in the building of silos. In one we built we went to a lot of unnecessary expense—stone wall, concreted the bottom floors, and, as usual, when fancy farmers undertake anything of that kind, spent piles of money we need not have spent. (Laughter.) It is necessary that spaces should be left to be filled with sawdust or earth. It is also necessary to exclude water. At one time it used to be very heavily weighted by placing upon it planks ranged crossways, and putting over them heavy weights. The idea was to keep out the air, because air causes putrefaction. Now in place of that we have found that if we merely spread the planks over the top and cover it over with earth, it is just as beneficial as heavy weighting Now I can only add to what Mr. Sprague has said, that I also believe that ensilage is bound to become an important factor in the economic production of milk throughout this Province at no distant day. We must recognize and remember the value of fodder corn as fodder. I remember when we first started our silo, some people in Hamilton called our ensilage "sauerkraut," and people came to see the "new feed," and called it rotten stuff. Now we see placarded last year in the seed stores "Ensilage sweet corn for sale," by the very merchants who then called it rotten sauerkraut. (Laughter and applause.)

Mr. R. J. Graham.—What kind of corn do you use for ensilage?

Mr. Fuller.—We use what is known as Nebraska corn, though I have heard that what is known as "B and W," Southern ensilage corn, is better. We intend to use it next year. We had always understood that it was only suitable to the western prairies, but find that such is not the case, and we intend to try it next year.

Mr. Derbyshire.—There is no doubt that the "B and W" is the one you want to sow. Now, for the benefit of any of you farmers who think it is going to be a terrible expense to build a silo, I will give you a little history of how to build one cheaply. You commence by selecting a site somewhere convenient to your other buildings. You make your foundation. The proper shape is about twelve by thirty-six feet, that is the most eco-

nomical size, the easiest handled and the best. You build a stone wall two feet deep all the way around, a solid mortar wall just as if you were going to build a house on it. Put on the slide and have it dropped right down level with the wall. Commence and dig clay and fill in one foot, so that it will be a foot higher on the inside than on the outside. This is the simplest plan to keep the water out. Take your two by twelve scantling or plank, as the case may be, and put them in, say they go right to the bottom of the silo. You put these twelve inches apart. You commence and board it up with rough timber. Then you take black paper—tar paper, and put it on, letting it lap over each time about four inches. Commence with inch floor lumber or tongue and groove lumber, and put on top of the paper. Fill up to the top and put the plate on top of that. Now you divide that into three partitions of twelve feet each. You remember that when they commenced silos, they used to get the whole neighborhood to work and make a bee to get the fodder into the silo quick after it had been cut. Now we go to work leisurely, without hiring any extra help. You run your corn, say into number one to-day, say four feet deep ; into number two to-morrow, number three the next day. By that time number one is heated up to 140°. You drop the cold ensilage on to that, and keep on in that way until the silo is full. We find that plank on the top of the silo doesn't work. You know that the hay in a hay mow doesn't settle in all points alike. Wherever the plank doesn't fit tight down the ensilage will spoil. Tar paper will settle down to the fodder and keep out the air. The tar paper should be put on each twelve feet separately. It will fit down tight and keep the ensilage just like canned pears. We like canned pears for ourselves, now why shouldn't we give our cattle some, too. (Laughter.) Besides this, it is the most economic food in the world. It is a food that is adapted for cattle—a grand food. It is the proper thing to do, and we, as farmers, must look more carefully to our interest than we have done in the past. We must cheapen the production of butter. We can never hope to get much more than from thirty to thirty-five cents for our butter, and any increase of profit that we may get must come from a decrease in the cost of production. We want to get twice as much milk with the same outlay, and we can get it with this ensilage corn. Mr. Fuller has told you that the estimate of Mr. Sprague is a very easy one. There is no reason why, if you plant this southern corn, you can't raise twenty or twenty-five tons to the acre just as easy as not. Go home and put your ideas into practice. Try, at least, a quarter of an acre. Put manure on it enough, that the corn will never hear a word about dry weather, so that the richness of the soil will make it get right up and go. (Laughter.) Plant half an acre to try it, right in your garden where you will get the ground rich. There are 515 silos in Wisconsin, and if it hadn't been for that they would have starved their cattle, and would have been obliged to let them go this winter.

Prof. ROBERTSON.—We at Guelph have had some experience on the ensilage question. We have sinned in regard to it, but, like other sinners, we have our moments of repentance, and we are now repenting our sins on the ensilage question. I consider ensilage about the best adapted food for butter making that I know of. (Hear, hear.) The dairy cow is the best contrivance the farmer can get for putting money into his pocket and putting good clothes on his back. The cow is the farmer's best friend, and ensilage corn is the best feed for the cow. It costs the least and gives the best results on the cow's digestive organs. It is cheap food. This has been demonstrated. Well cultivated land will yield twenty tons of it to the acre, and this will feed the cows better than six or eight tons of the best hay in this country. It is a very healthy food. There was a contention a while ago that cows fed on ensilage were not healthy. I dare say there was some truth in the statement in those particular cases, because the ensilage was not made well. Cows would not be healthy if fed on rotten hay, and neither would they be healthy if fed on rotten ensilage. Last year the British Government tried to get a report from all the farmers of England regarding silos. Out of 279 reports as to the health of the cows fed on it, only eleven farmers reported unfavorably, and only twenty-two said they did not see any good results. All the rest said it improved the quantity and quality of the milk, and the ensilage is not nearly as good there as here. Ensilage is more easily digested as to the solids it contains. There is as much digestible in 900 lbs. of ensilage as in 1,800 lbs. of hay, and it is a great deal to get solids that are easily

digested. It is a well flavored food. The history of the Oaklands Dairy proves this conclusively. If we could get the same prices that Mr. Fuller gets we would be delighted. And if Mr. Fuller can satisfy the taste of the Toronto epicures as regards flavor of butter made from ensilage, we don't want any higher proof. Let us feed ensilage, and reduce the cost of production.

Mr. GRAHAM.—It would be wise to have Mr. Fuller explain his method of cultivating the ground.

Mr. FULLER.—We plant in rows eighteen inches apart. We use a planter that will throw the corn the required distance, by means of arms which run along the ground a certain width as required. We generally put these about four inches apart. We then run the harrow over it, and the cultivator is afterwards put over it once or twice. We allow it to grow, and it generally kills out the weeds. Proceeding, Mr. Fuller said, that no doubt many of those present would be interested in knowing the value of ensilage for beef cattle. He quoted the results of experiments made by Dr. J. A. Faulkner, showing that ensilage had proved to be most valuable in this respect, the cattle fed on ensilage during the time of the experiment having gained an average of 84.3 lbs. each, while the cattle fed under similar circumstances on other food had only gained 20.3 lbs. each on the average.

Mr. HENRY HARTLEY.—Said he had listened with great pleasure to the admirable paper on ensilage and to the remarks made by the gentlemen who had discussed it. He said that he had some experience of agricultural life in Holland in his younger days, and he had learned there that ensilage feed with molasses would give the best possible results in feeding.

Mr. JAMES MILLER.—I would like to know how to build the outside of the silo.

Mr. DERBYSHIRE.—I didn't finish that building. You can clapboard it on the outside, or you can finish it any way you please, as cheaply as you have a mind to. Boarded and battened would be the cheapest. You want a good roof on it, and you want it to be perfectly water-tight.

Mr. MILLAR.—Would there be any danger from frosts?

Mr. DERBYSHIRE.—There might. It had better be clapboarded and painted. You have twelve inches of air space and this will keep it air-tight. I speak of this at this time because many have got it into their heads that it will cost a mint of money to build a silo. I want to show you that you can build a silo cheaper than any other storage. It will cost you $2 a ton for silo storage, and you could not do hay for less than $7 a ton.

Mr. FULLER.—Cheaper than that for ensilage.

Mr. DERBYSHIRE.—I am putting it at the outside figure. You can build the ensilage storage for $1 a ton, but you can have your silo in splendid shape, and polish it up on the outside for $2 a ton. (Laughter.) A great many talk of building a silo right in the hay mow. I wouldn't. Have it set right out so that the people will know that you are a progressive farmer.

Mr. FULLER.—I would suggest that that space you speak of should be filled with saw dust or tan bark, or else you will have trouble from frost.

Mr. DERBYSHIRE.—All right; fix it just as you have a mind to, only make it right.

Mr. CHEESMAN.—I would like to ask Mr. Sprague how he knows that the feed value of ensilage is $7 a ton.

Mr. SPRAGUE.—I know what hay with us is worth, and we reckon that two tons of ensilage are worth one of hay.

HOW TO FEED CALVES.

The following paper was read by Mr. Henry Groff:

When a calf is dropped, the cow is allowed to stay in the stable with it for the first four or five days. After this age, for the first month the calf is allowed to suck three times a day, but after the expirati n of one month, only twice a day. We allow all our calves to suck until they are four months old, and sometimes let a choice calf suck six months. When cows are on pasture while sucking, we generally give each cow half a gallon of bran each morning and night. This is continued until about the middle or end of July, or as long as the pastures are good and the weather cool, but when the pastures become poor, the weather hot and the flies troublesome, we keep them in a darkened stable during the day, but allow them to run out in the fields at night. When kept in the stable during the day they are fed on cut straw or clean wheat chaff, to which is added bran, a few boiled peas, a little flax seed, and Thorley's cattle food. For twenty head of grown cattle, when on grass at night, we give ten bushels of chaff, thirty gallons of bran, one bushel of well boiled peas, one pint of flax seed boiled with the peas.

In preparing the above food for use, the chaff or cut straw and bran are put in a large feed box, then the boiled peas and flax seed, with the liquid in which they were boiled, is added hot from the furnace. As soon as one meal is fed the food is prepared for the next. The box is covered over as soon as the food is well mixed, and all the steam kept in. In feeding calves, such a quantity of this food is given as is suitable to their age. The above food is given three times a day, and as soon as it is eaten at morning and noon, as much cut green corn is fed as each animal will eat up clean—no green food is given at night, for when the cattle have eaten their evening meal of steamed food, they are turned into the pasture. Whenever it is noticed that an animal does not eat well, the quantity of food given is diminished. We never give more than the beast will eat at the time, and always keep food boxes clean; this is essential to success in feeding. We occasionally sprinkle a little salt in the boxes or troughs after feeding, and always sprinkle salt on the boiled food. For winter treatment the warm, mixed food is continued, but a little more is given; and instead of pasture and cut green corn, hay and cured corn stalks, cut up with pea straw in equal proportions, are fed. These corn stalks and pea straw are prepared and fed as mixed warm food. We also feed a few turnips to each beast, but do not believe in giving too many cold roots in winter, considering the warm, mixed food much better, especially the boiled peas. We give our aged cattle about three pecks of turnips per day; to our fattening cattle we give about one gallon of pea meal per day, mixed with the mixed food, and divided into three meals. We fatten off our cattle between two and three years old, and hold that all cattle should be sold to the butcher by the time they are three, in order to give the farmer the best results.

The above has been our method of feeding cattle over two years. As before stated, we allow our calves to suck from four to six months, generally letting the dam suckle her own calf; but in cases where it is desirable to dry the dam for any reason, another cow is procured and the calf allowed to suck her, and the dam milked a short time until she is dried. We have found it preferable to keep the calves in the stable during the first summer. We think it advisable because the calves learn to eat much sooner and better, they grow faster, and do not worry the cows or themselves nearly as much, and are protected from the heat and flies, which we think very important. As soon as the calves can be induced to eat, which is at about six weeks old, they are fed with a little bran and oats at first, as much as they will eat at a time, and as soon as they begin to eat well, bran and peas with a little Thorley food, are fed three times a day; never feeding more than they will eat clean at a time, but always as much as they will eat. Before the grass or green food comes in, a little hay is given, clover hay being preferred, and if it is the season of the year when roots are fed, we give to each calf a few cut fine, twice a day. But as soon as green food can be obtained it takes the place of hay and roots, and is fed three times a day. Clover hay coming in first is fed in the early summer, then American corn, which is always cut up in straw cutter and fed as turnips in a trough. The calves are always allowed to run loose in a box stall, being careful to keep those of an age and

size together, so that all get their share; for if large and small were allowed to run together, the large ones would thrive at the expense of the smaller. Plenty of fresh water must be supplied three times a day during the summer, and twice a day during the winter. This treatment is continued until beginning of second summer, or until they are twelve or sixteen months old, after which time they get the same treatment as the aged and breeding cattle. The breeding cattle are let out of the stable each day during the winter just long enough to drink, and returned to the stable, but the fattening cattle have water carried to them. This is done for the purpose of keeping them quiet and warm, and it is found to pay. We think in all cases it pays better to keep an animal growing from the time of birth to maturity, and there is no time to stint it of feed and water.

While we lay great stress on proper and plentiful feeding, we also consider good ventilation, warm and cleanly kept stables, and gentle treatment, of vital importance. We never allow a dog in the yard or stable, nor persons employed, to be noisy or rough when among or near our cattle. Nor do we allow our animals to become dirty; all are curried or brushed at least twice a week during the winter, but we prefer it done daily if possible.

Mr. DERBYSHIRE.—Do you warm the water?

Mr. GROFF.—No.

Mr. DERBYSHIRE.—Why? You talk of giving them warm food. Why not warm the water? Wouldn't it save some of the food which would otherwise go towards making up the animal heat?

Mr. GROFF.—I suppose so; but we human beings like a drink of cold water sometimes, and it is the same with cattle.

Q.—To what weight do you bring your calves during the first twelve months?

A.—About 100 lbs. to the month.

Mr. CHEESMAN.—In what way do you buy your molasses, and what does it cost you?

Mr. GROFF.—It costs twenty-six cents a gallon by the barrel; thirteen pounds to the gallon makes it about two cents a pound.

Mr. CHEESMAN.—What is your primary object—beef?

Mr. GROFF.—Yes, beef.

Mr. FULLER.—You wouldn't advise allowing the calves to suckle for this time if you were keeping cattle for milk purposes?

A.—If I wanted the cream for that purpose I would not let the calf have it.

Mr. FULLER.—Wouldn't it have an effect on the continuity of the milk?

Mr. GROFF.—I believe it would.

Mr. FULLER.—Wouldn't you judge that it has a tendency to dry up a cow?

Mr. GROFF.—Yes, by all odds.

Mr. DERBYSHIRE asked if it would not do to feed them warmed skim milk and oil cake?

Mr. GROFF.—I'm afraid you would not get the same animal.

Mr. J. PHILP said that Mr. Groff's object was to feed for show cattle. A great many present had other objects in view. Would it not be profitable to feed the calves on warmed skim milk and oil cake, and a little molasses?

Mr. GROFF.—I have raised fine calves by giving them their dam's milk for the first four or six weeks, and then giving them a small quantity of bran and sweet milk, adding a little linseed meal finely ground. You can get a good beef animal that way, but you could never get a good show animal.

Mr. DERBYSHIRE.—Is it not a fact that you can raise a calf with linseed for one-half what it would cost to let it suck its mother?

A.—Yes; it is much cheaper. I don't know about the half, but you wouldn't get as nice a calf.

Mr. DERBYSHIRE.—Still you would get one that the hair would run the right way on? (Laughter).

A.—Yes; the secret is in giving it food enough, and feeding it at the proper time.

Mr. LAIDLAW.—What breed of cattle do you raise?

Mr. GROFF.—Shorthorns.

Professor ROBERTSON said he believed in raising calves in the cheapest way. Butter at twenty-five cents a pound was too dear to feed to calves. He took the cream off and fed the calf with the skim milk. The only argument in favour of the sucking itself, was that the sucking made the calf pump, and every time the calf sucked it pumped a fluid from its glands on to the milk; that saliva aided the digestion. If you fed the calf on milk simply, you lost this advantage, but the same effect could be produced by feeding the calf a little dry bran, which brought out the saliva. He had found that the calf thrives nearly as well; besides, he had all the cream to sell.

Mr. CHEESMAN said calf feeders were now made which rendered artificial feeding as favourable to digestion as the sucking from the mother. It was the almost universal custom in England now to feed the skim milk with a substitute for the cream, and these substitutes had become so common that it was almost impossible to pick up a periodical without seeing the advertisement of some new substitute. Mr. Fuller would tell them that he scarcely ever used the whole milk, but that he had secured the best results and the highest prices, as, for instance, at the New York sales, by feeding on skim milk with flax seed and oatmeal, while his rivals, Mrs. Jones, of Brockville, and Mr. Reburn, of Montreal, fed the whole milk.

Mr. MOYER.—This is a dairy meeting and you want to know how to feed your calves with skim milk to the best advantage. Here is an idea that costs you nothing. Give them the milk always at the same temperature. One of my patrons had particularly good calves. He was asked what he used with his skimmed milk to bring about such good results. He said, "I put in hot water, and that is all." Some people give their calves cold ice water to drink, and that is very hurtful. This costs less than even cheap molasses, and if you pay attention to it you will derive as much benefit from it as you will from anything else that has been suggested to you.

Mr. FULLER.—I would like to corroborate this. Great loss is caused by feeding the milk to them too cold. A thermometer should be kept, and the food should be at 96°. Feed them with food at this temperature and they will be free from scours, which are caused generally by over-feeding, or by feeding them too cold.

Mr. MOYER.—Some think that it is a great deal of trouble to heat this milk. That is a mistake. All that is wanted is a little hot water.

Mr. DERBYSHIRE.—It is a further fact that it is more natural and will not injure the digestion of the calf. The mother prepares the milk just right for the calf, and the nearer you get to the mother's milk in temperature, the better it is for the calf. Feeding it cold sour milk, would destroy the very best calf in the world.

Mr. FULLER.—You said it was advisable to have the milk, as nearly as possible, like what nature intended. Be a little more specific in regard to that point.

Mr. DERBYSHIRE.—I mean as to warming.

Mr. FULLER.—More than that.

Mr. DERBYSHIRE.—I would have in the commencement, a little oil meal. I would have something that would make the milk just as good as I possibly could, and feed it regularly.

Mr. SPRAGUE.—What breed of cattle do you recommend for the dairy?

Mr. DERBYSHIRE.—Now, I am just foolish enough to give you my opinion. Don't take it unless you want it. If I were going into cheese I would get a sire from the very best Holstein breed, and then I would take the best of my dairy cows and raise the stock from him. If I were in the creamery line I would get a sire as near like the Jersey, Canada's John Bull owned by Mr. Fuller of Hamilton, as I possibly could. (Laughter and applause).

THE OUTLOOK FOR THE CREAMERY BUSINESS.

The following paper was read by Professor James W. Robertson :

A few men have encouraged the habit of looking at the bright side of everything into a fixed quality in their character. That is admirable.

Others, without looking into the merits or demerits, the strength or weakness, the helpfulness or harmfulness, the benefits or disadvantages of any subject or business, are forever pouring out compliments and congratulations. That is unfortunate.

To the creamerymen who are satisfied with last season's business, let me offer a few suggestions, with a view to the making of their appreciation of the business fully justifiable, by an examination of its real and possible value to the farmers of Ontario.

Incidentally, I may also answer the croakings of the few pessimists, who are continually vexing the exposed surface of their souls, by reason of the fear which they have talked themselves into believing as real, viz., that the bottom is just about to fall out of the dairy, and especially the creamery business. That state of mind is deplorable—for them.

By examining the nature of last season's operations, future failure may be guarded against by change and improvement, wherever weakness of management or arrangement has been discovered. There is need for more thoughtful and honest enthusiasm on the part of those engaged in extending the industry. There is cause and just ground for this feeling in the consideration of what a single creamery is worth to a locality which gives it a hearty support.

The average price of creamery butter throughout the Province is, at least, six cents per pound higher than the average price of dairy butter. The average yield of butter per cow, during the creamery season, is yet under 125 lbs. Thus 1,000 cows in any locality (which one creamery could very well serve), would yield, at even the present lamentably low rate per head, nearly 125,000 lbs. of butter per season. That quantity, if average creamery butter, would bring into the locality $7,500 *more* money or value than an equal quantity of average dairy butter. By allowing an equal increase of value for every 1,000 cows in the whole butter making area of the Province, a fair estimate may be formed of the possible value of one aspect of the creamery industry.

Besides the milk cows, whose milk is wholly used for calf raising, there are some 620,000 cows milked in the Province. A large quantity of milk is used in cheese making; and the table consumption requires many millions of gallons. Still there are about 900,000,000 lbs. of milk made into 32,000,000 lbs. of butter in Ontario. Not more than 50,000,000 lbs. of milk are used by the creameries.

The outlook then offers large opportunity for the usefulness of creameries.

Their value can be greatly increased and extended, even in districts already occupied, by securing the undeveloped milk supply of those sections. Observe in the first place that (1) not more than half the cows in most neighbourhoods contribute milk. (2) That twice as much milk and butter might be got from the same number of cows. (3) That twice as many cows might easily be kept per acre on the same area. This eightfold increase can be realized in time, by agitation and education that will reach every farmer. Nothing should be left undone that will induce the farmer to think, plan, prepare, select breed, feed and care for cows for the special and particular purpose of dairying.

They may be attracted towards the creamery by many means.

Let me specify two of them.

1. By fostering direct market contact, and the consequent market education, of dairy butter makers, they will be led to appreciate the creamery's provisions.

2. By proving the practicability and advantage of raising good calves economically on skim milk, stock-raisers will be drawn to support it. Every creamery owner and creamery patron can increase his own profits very much, while substantially furthering the interests of the industry, by drawing the attention of his neighbours to these facts through his own practice.

Some of the needs of the creamery business already hinted at, may be presented as—

1. The *need* for a reduction in the cost of producing cream on the farm.

This can be met and satisfied by the selection of suitable and profitable dairy cows. It pays best to have cows that give milk for not less than ten months every year. Two hundred and fifty pounds of butter per cow for the season, should be the lowest standard for which the creamery dairymen should aim.

Fodder corn seems to me to be an indispensible crop for the economical production of milk. The best results as to feeding value per acre, will be secured from Mammoth Southern sweet corn, B and W corn, Red Cob ensilage corn, or some other such variety of large growth in leaf and stalk.

The corn should be planted in rows at least three and a half feet apart, or in hills, and not sown broadcast.

Abundance of sunlight and air are necessary to the attainment of full feeding value. The earlier it is planted the better. One freezing in the autumn does the fodder more harm than three freezings in the spring. Before cutting for fall or winter feed, the the plants should have matured nearly as far as the glazing stage, or to that condition where the ears or nubbins are almost fit for roasting or boiling. It is beyond the scope of this address to discuss fully the best feeds and how to use them, but mention must be made of the value of bran to the creamery dairyman. It will pay to feed a small quantity of dry bran twice a day all summer. Then intelligent care of the cows and kind treatment, adapted to their work of milk making, is essential to further success in the endeavour to reduce the cost of production.

2. Another of the creamery's *needs* is that of a better market for its products.

To gain this it becomes us to develop the home market of our own towns and cities. Scores of families are willing to pay renumerative prices for a regular supply of fancy, mild butter. A home market would be one more permanently profitable for the butter maker than a foreign one. The finest quality in butter will always command a fancy price, and will create for itself an unlimited demand.

Let me now, in sequence, describe a few of the difficulties that stand in the way of the prosperity and progress of the creamery business.

1. First stands a lack of interest of an intelligent quality in their own business, by those who manage factories and supply cream.

2. Then is met the still existing doubt as to whether stock raising can be followed with the best results when prosecuted in connection with the business of furnishing cream.

3. There yet lingers in many farmers' minds a fear that the business will not develop into profitable permanency.

A lurking suspicion has been cherished that advocates of the creamery system had some ulterior purpose to serve in the way of patent rights or contrivances.

Happily these difficulties are being quickly overcome or dispelled by the experience of years.

A thoughtful examination of the outlook reveals the existence of certain *dangers*, which had better be plainly named that they may be guarded against. Disaster cannot be otherwise averted.

1. There is grave danger in the careless neglect of some patrons to properly provide pure water, wholesome feed and free access to salt for milk cows.

2. The danger from the want of knowledge of how to care for milk in the preparation of cream for creameries is serious.

Every butter maker should furnish each patron with a card of instructions.

3. There is danger to the character, and, consequently, to the reputation of creamery butter, from the aim of too many butter makers being merely to produce an article that *will pass*, instead of doing their level best to turn out an article that will *fully please* both the buyer and the consumer.

4. There is danger from a season of severe drouth finding the patrons unprepared with a suitable soiling crop with which to keep up the flow of milk.

5. One year of disappointingly low prices will prove very damaging, unless all concerned take heed in time and adopt means, such as those suggested, for reducing the cost of production. Safety as well as profit lies in putting down the *cost* (not the selling price) of a pound of butter to the lowest possible point.

In concluding this analysis of the outlook, let me point out a few ways and means that may be followed and used to reach the ends suggested.

1. A butter maker's instructor and creamery inspector should again be appointed.

2. Bulletins will be issued from the dairy department of the Ontario Agricultural College from time to time during the summer.

3. The home markets of Ontario should be appropriated by creamerymen. The market competition with dairy butter would benefit creameries.

4. Some adequate cold storage convenience should be provided for all butter intended to be held over.

5. Winter dairying should be encouraged.

6. A meeting of the patrons of every creamery should be held once a year to compare notes, as to the amount of money per cow realized, by the several patrons. The methods of the most successful would then become known to all.

7. Meetings under the auspices of the Creamery Association, and attended by a competent speaker, might be held in all unoccupied sections needing full and reliable information concerning the business.

Mr. CHEESMAN.—At the Toronto Industrial Exhibition last fall, we lost the first and second prizes for creamery butter. Manitoba got them. Mr. Caron, who won the first prizes for creamery butter at Toronto, and also at Ottawa, made one pound of butter from 19.4 lbs. of milk through his working season of six months. This is chiefly due to the Manitoba herbage, but partly to the butter quality of the old Quebec grade cow. I would like to ask two questions. First: How old a factory was it? Second: Had they lately changed their butter maker?

Prof. ROBERTSON.—I cannot answer that, but whoever the butter maker was he kept the cream vats clean, and himself clean, and the other men didn't. (Laughter).

Mr. FULLER.—You said that there are 900,000,000 lbs. of milk being made into butter annually. Do you know what is the average amount of milk per pound of butter throughout the Province?

A.—My estimate makes it a little over thirty-three pounds, during the summer.

Q.—In this section of the country?

A.—Yes.

Mr. WENGER.—Our experience was that it took twenty-five pounds.

Mr. FULLER.—I don't think that that impression should go abroad through the country. If it is so in a certain section, it is owing to the breed or class of cattle kept there. I have had tests made on common milk, such as we buy from neighbours for sale in the cities as ordinary milk, and we make four pounds of butter for every 100 lbs. of milk, and we should get a pound of butter for every twenty-five pounds of milk. That would equal 36,000,000 lbs. At twenty-eight cents per pound, this gives $10,080,000. Of course a certain amount of that is consumed in the farmer's own house, and does not go to the market. By having proper cows, fully a million and a half more each year could be realized. Our Jersey herd average one pound of butter from sixteen pounds of milk.

Mr. CHEESMAN said the average quantity was from twenty-four to twenty-six pounds of milk to a pound of butter, in Ontario. In Quebec, where separators were more extensively used, the average was twenty-two to twenty-two and a half pounds of milk.

Professor ROBERTSON said there was a loss of nearly one-fourth in getting the butter out of the milk, through lack of proper means.

Mr. DERBYSHIRE said we were not consuming one half of the amount of butter which we would consume if it were of the proper quality. Anyone travelling in our hotels would be disgusted with the vile stuff they called butter, and if the quality of the article were improved, the amount consumed would be greater, the demand would be larger, and the home market would be greatly increased. Oleomargarine would be a blessing in disguise compared to some of the stuff we called butter.

ELECTION OF OFFICERS.

The officers of the association were elected at the evening session as follows:—

President.....D. Derbyshire, Brockville.
1st Vice-President.....J. T. Brill, Guelph.
2nd Vice-President.....R. J. Graham, Belleville.
Secretary-Treasurer.....James Cheesman, Toronto.

Board of Directors:

Division No. 1.....W. D. Rutherford, Iroquois.
Division No. 2.....Ira Morgan, Metcalfe.
Division No. 3.....James Miller, Spencerville.
Division No. 4.....John Sprague, Ameliasburgh.
Division No. 5.....Geo. Garnett, Bethany.
Division No. 6.....John Leys, M.P.P., Toronto.
Division No. 7.....W. H. Brubacher, St. Jacobs.
Division No. 8.....Valancey E. Fuller, Hamilton.
Division No. 9.....J. D. Moore, St. Marys.
Division No. 10.....A. Wenger, Ayton.
Division No. 11.....Erastus Miller, Parkhill.
Division No. 12.....Peter Graham, M.P.P., Warwick.
Division No. 13.....John Hannah, Seaforth.

Mr. DERBYSHIRE.—I assure you gentlemen, that I will do everything I possibly can to bring this business prominently before the people. I think that to be president of the Creamery Association is an honorable position; one that it requires the greatest possible ability to fill, and one that I feel I am unable to fill as wisely and ably as I would like to. However, I will do the best I possibly can, and with the names I see here as directors, I feel that we shall carry on the business fairly well, because they are the names of the bone and sinew of the dairy interest of the Province, so that we will be able to bring this matter to a grand climax, and put this creamery business on a solid footing. I think that the creamery business and the butter business has been neglected in the past. The cheese sent from here to the Colonial Exhibition have taken the first place against the world, and why can't we take the same position in the butter business? There is no reason why. We have the grass and the water. We have the ability if we could only get it directed aright. We want to have the finest milk, and then to have it manufactured in the best way, and placed on the market in the best condition. One of the great troubles that we have at the present time is the holding of this butter until it is unfit for market, and I hope and trust that the influence of this meeting will make itself felt throughout the length and breadth of this land, so that we can not only live on cheese, but also on butter, and make the resources of this Province creditable to us and to the grand Dominion, of which we form so important a part. The cheese business has reached a grand point. Nine millions of money it will reach this year. Why not place the butter on the same high level? We should do everything we possibly can to bring this about, but we cannot expect to do much without the co-operation of the people. I want them to take hold of this matter and make it a grand success. I am satisfied that the influences of this meeting will be felt even more than they have in the past. I know places that are struggling with quantities of good milk, and are not giving them to the creameries. That is a great mistake. You can sell creamery butter for six cents, aye, and sometimes even ten or twelve cents per pound more than the other. I make it a point to let people see this. I have the idea that our people hold the butter back after there is a scarcity. Why, take even the creameries, even with all our enlightenment, didn't some of us hold the butter this year until it was unfit to eat. Some of the leading men of this association have been shining examples to the rest. (Laughter.) We should look carefully to see that we are managing our creameries to the best advantage, and to the best interests of those connected with us—the people who have entrusted their milk to our care. And, also, you should make your influence felt, that throughout the Province of Ontario others will take up the creamery business and build it up in their own localities. I feel very warmly on this question. I feel that the influence of this Ontario Creamery Association has not been what it should have been. Now that I am the responsible head of this institution, I want to make it an association for good throughout this Province. We ought to have five or six hundred names of members belonging to this association. I want everyone who has been elected here to-night, to get at least twenty or twenty-five names in their several localities, and send in their dollars. (Laughter.) I will take it in hand to get twenty-five names in Brockville. I want your co-operation, influence and help in every way to carry on this work and make a grand success of it; and place before the people the finest quality of butter, and work up a grand home market. The United States have done this, and they sell butter to-day for forty cents a pound to their best customers. We have just as intelligent a class of people. Here is Mr. Fuller selling his butter for forty-five cents a pound in Toronto. Why can't we make butter like that? If you sell a man good butter worth forty cents a pound, do you suppose you can ever sell him any more ten cent stinking stuff after that? You can't do it. There's is a profit between the two prices! There's a margin for you! It is to your interests and the interests of the people of Canada and our revenue, that the home market should be worked up. We want the butter and cheese to work hand in hand. You have elected me President, and I hope we will be able to go forward as a progressive people and keep pace with the age in which we live. (Applause).

PROPER TIME TO SELL BUTTER.

Thomas Johnston, a Toronto butter buyer, read the following paper :

In dealing with the subject of my paper, viz., the proper time to sell butter, I have to fall back upon my experience as a buyer. I have found it difficult, if not impossible, to form correct views of how the prices of a season may run from the quantity of butter made in any past season. The demand for butter for the British market, which is the great output for our product, depends mainly on quality and price. If the quality is good shippers are at all times willing to take any quantity at a price that leaves them a small margin for profit ; if poor, it must be sufficiently low to ensure a demand, or there will be an accumulation in this country which will result in serious loss, both to makers and shippers. It is an old saying that seasons beat judgment, and if you look back to last summer, when we were threatened with a serious drouth, and, consequently, a small make, many looked forward to famine prices and advanced their ideas until the high figures asked caused a stoppage of all export business, and a good market was lost. The quality also deteriorated, which makes it hard to sell anywhere now. My opinion is, that the proper time to sell is immediately after it is ready for market. It is then at its best, having the needed freshness and fine rosy flavour which is its great recommendation in the old country, and we must give them what they want, which we can do if we follow the continental system by sending the butter to the various markets early. We have difficulties to contend with here in summer shipping, but they can be overcome by using the refrigerator cars. As soon as sufficient is made in a factory or section, I think it should be sold at the best obtainable price, even if it appears low at the time.

If we forward our butter in this condition, and they saw there was a probability of the supply being continued, a steady demand would arise which would eventually result in all we would require, that is, a constant market at fair prices. These remarks apply more particularly to the June, July and August makes. Butter made before June, when it is pale and weak, should be sold immediately in the home markets, and not kept for export or sold with grass butter. That made after August, or in cooler weather, may be kept a time with less risk of its getting stale, but bear in mind that butter off flavour is not wanted in England, except at much lower prices than can be made for it when fresh. All interested in creameries should unite and endeavour to bring about this end, neither speculating or holding for high prices, but sell as soon as ready for market. Ontario butter would then be wanted, and would take its proper place in England, bringing prices approximating to those realized for continental makes.

My purchases in the early part of the season were shipped direct through and gave splendid satisfaction. I could have continued buying from week to week and month to month, had makers been willing to take current prices, but the spirit of speculation was afloat, and the result is, that butter, which should have gone into consumption at good prices, is now, or was until recently, in the hands of the makers. I would say in conclusion, that the proper time to sell creamery butter is when it is fresh, full flavoured and fit for table use. No rise in price will make up for deterioration caused by holding. Ontario would then enjoy a reputation for butter equal to that she now has for cheese only. Ontario butter, instead of being considered the worst shipped to England, would rank among the best.

Mr. WENGER.—Until you can fix it so that buyers won't speculate you can't blame those who make the butter for speculating with it. I know this from very large dealers who sold my butter for me in the old country. They wrote me that we should put up good storehouses and hold back butter, because they had a supply from the continent, and they wished us to hold it until the cold weather.

Mr. DERBYSHIRE.—Do you want Professor Robertson to answer you?

Mr. WENGER.—Anybody that can.

Mr. DERBYSHIRE.—I am satisfied that Professor Robertson will answer that question in a moment. We have not held a great deal of butter. Our business is to buy the

butter when it has that rosy, aromatic—I think that's the word—flavor, (laughter) and put it into refrigerator cars and apartments in the ship, and send it to London, and Glasgow and Bristol in this fine fresh condition. And that is the only way in which we will ever be able to compete with the continental butter. And we can take their market from them if we use the same judgment and skill that we have used in the cheese business. We have the grass and other natural conditions more suitable than they have. But you have said to the men who wanted to buy your butter, "We will not sell." Then these men turned their attention to New York, Boston and continental butter. Later on you came on with your stale butter. These men have formed their connections. Will they drop a man who has furnished them regularly throughout the season? Now I know exactly what I am talking about. I would have done exactly as these men have done, the men who were prepared to deal with me in the time when I wanted the butter for the consumers, these are the men to whom I would stick when their turn came. We want to take our consumers in the spring, and show them that we are prepared to furnish them with a nice quality of butter, and if we do that we can hold the markets in spite of the world. If we don't do that, we will lose them, and we will never regain them in the world.

Prof. ROBERTSON.—I quite agree with the remarks made in the paper that has just been read. There is a loss to everybody when butter is spoiled in flavour by keeping it too long. It is a loss to the farmer, because he loses his reputation. It is a loss to the merchant, because he loses his profit. To my mind, however, telling a man he ought to sell butter when he doesn't want to sell it, won't make him sell it. If the creamery man makes up his mind to keep it, he should have such conveniences for keeping it that it will stay just in the same state of freshness and rosiness that it was in the beginning. He should never keep it unless he can keep it nearly frozen. I tried it last year. I bought for twenty-five cents, held it, and sold it for eighteen. (Laughter.) After all, if we are going to maintain our reputation we must be able to keep the butter in the best condition. Our summer butter, we are told, will not be consumed in England until November. If we are bound to hold our butter for the high-priced winter trade, then let us make ample provision for holding the butter so that it doesn't spoil.

Mr. WENGER.—A temperature of 52° or 55°. How would that hold butter?

A.—I find that too high. If it is cooled down to 45° and allowed to get warm again it will spoil. But if it is cooled down to 45° and held over it will keep longer. The Danes have done something in this direction. They shipped in refrigerators, butter to England, as an experiment, to six different commission houses, and had butter sold which had been kept at different temperatures. They found that the butter that had been cooled to 45° sold the highest.

IMPORTANT FACTORS IN MAKING THE BUTTER INDUSTRY PROFITABLE.

The following paper was read by Mr. Valancey E. Fuller:

It is generally conceded that no branch of our agriculture in Ontario is in so backward a condition as the butter industry, and the object of this association is to improve it.

It cannot for a moment be contended that Ontario is not, in its climate, in its soil and pastures, its water, and in the character of its inhabitants, admirably adapted to superior butter production. Sweden cannot compare with Ontario in these essential adjuncts to butter making, and yet the former country is rapidly acquiring a first rank for the quality and quantity of its butter. We must seek beyond the natural causes for the true solution of this problem, and I shall endeavor to point out what appear to me to be a few of the causes. First and foremost, to my mind, is a want of knowledge in the art of butter making. I say the art, because the knowledge of how to produce a good article of butter is not acquired save by application, care, study, and experience. It is too commonly believed by the majority of our farmers that when the cream is separated from

the milk and is made into butter the one to whom this part of the farm work is relegated has performed his or her duty. No regard is had to the cleanliness or health of the cow; to the food partaken of by the cow; to the cleanliness of the utensils into which the milk is drawn and later on retained; to the absolute necessity of keeping the cow stable free from objectionable odors; to the retention of the milk and cream in a pure and wholesome atmosphere; to the proper mixing and thorough incorporation and equally ripening by stirring of the cream of various ages; to the proper ripening of the cream; to the proper temperature of the cream at the time of churning; nor to the fact that butter should not be worked until it is one mass of grease; to the beneficial and profitable result that always follows from the packages being prepared in the most neat and tasteful manner for the market. All these points are absolutely necessary and must be carefully guarded if we wish to produce an A1 butter. That this knowledge is not possessed by the majority of our butter makers is too painfully apparent when we go upon the open market to purchase butter for our own tables, and it is so conceded by the general public.

Millions of dollars are annually lost to the province by this lack of knowledge, and our farmers are poorer by millions of dollars every year. How can we best remedy this? Such meetings as we are holding to-day is one of the means to that end and the objects that this association has in view, the establishment of creameries, is one of the quickest and surest educators. Discussion in an intelligent audience will always give us fresh light on any subject, and the establishment of creameries, when conducted in an intelligent and skilful manner, has in other countries been the means of improving the butter making knowledge to a very appreciable extent.

Farmers' wives and daughters, upon whom generally falls the duty of the dairy work, have not the time or opportunity in this country to learn the art of butter making in its highest conception. But when a creamery is established the quantity of milk which is sent to any one creamery justifies the employment of one who has a thorough knowledge of his calling; one who knows and can impress upon the patrons the necessity for the proper care and feeding of the cows and the dealing with the milk and cream. The enforced necessity of producing the cream or milk in a clean condition is in itself an educator to every farmer supplying such, and the modes pursued at the creamery in producing the butter, and the extra price obtained for the same act as a stimulant not only to the patrons, but to every farmer in the neighborhood, to emulate, and, if possible, equal the product produced at the creamery.

But are all our creameries requiring at the hands of their patrons a proper raw material, and are they making the best article of butter possible to be produced? I fear not. Then surely our first work is to set our own houses in order, by the visit of a properly qualified inspector or instructor before we seek to establish other creameries, and when this end has been reached let us one and all seek by all means in our power to encourage the establishment of additional ones.

I do not hold to the opinion that an equally good article of butter cannot be produced in a private dairy; on the contrary, I believe that with equally good surroundings and with an equal knowledge better butter can be made in private dairies; for the reason that on one farm, with the requisite care, a milk and cream more cleanly and perfect can be produced than when the buttermaker is obliged to depend upon the cream of many farms. Yet from the very nature of other work on the farm the creameries must be, for years, at least, the source from which our best butter will be drawn, and they will also act as the best and quickest educators in butter-making.

At the price at which beef and wheat have been selling in the past two years, no branch of farming will be found so profitable as the dairy cow, and yet the average cow of Ontario does not produce one-half the annual return that she is capable of.

The cow was intended by nature to produce but enough milk to raise her calf. She is now, as a deep milker, the creature of man's handiwork. From my own experience, I know that the length of time a cow will keep in milk depends much upon her care, feed and handling. The first year of milking is the proper time in which to lay the foundation for a persistent milker. Milk her with her first and second calves but for four to six months, and you will fix that "habitude" in her. On the contrary, feed her well, and milk her up to within six weeks or two months of her calving and persist in this and you

equally as thoroughly fix the habitude to continue long on her flow. If this course were persisted in by every farmer in the country we would have the annual production of our milk per cow largely increased, and our cows would in the winter time help to keep themselves, in place of being kept, as is too often the case, in a wretched and impoverished condition, only to require an extra amount of feed or grass in the spring to bring them to their flow of milk. "Like begets like or the likeness of an ancestor," and the "habitude" you have fixed in your stock for two or three generations will be handed down to their offspring. If our cows will produce 5,000 lbs. of milk per year (equally as good as when they produced but 3,000 lbs.) every pound of butter made from such extra 2,000 lbs. means an additional profit to the owner. To fix a habit of continuing in milk, I claim, is a factor in making the butter industry profitable. Such long continuous milking means, to the creamery men, winter dairying; but I know in the United States the best creameries are keeping open all the year through, and I have no doubt our creameries would be only too glad to do so were they assured of the milk. In the experience of others, as well as my own, I know that cows calving in the fall, as a rule, with proper care and housing produce more milk in a year than those calving in the spring. Cows calving in the fall and beginning to fail towards spring are picked up by the grass, and a fresh and additional flow of milk given to them, whereas those calving in the spring are checked by our droughts of August and September, and unless unusual care is taken they fall off when going into the stables. Butter made fresh in the winter will always produce a better price than packed butter. For these reasons, I claim that winter dairying is one of the factors in profitable butter-making.

Dry fodder corn is not used for milk production to the extent that it should be. When cut and steamed and fed with bran and shorts, it makes a most excellent and cheap food, and the knowledge of its merits should be more thoroughly disseminated throughout the country. When it cannot be steamed, if run through a cutting-box and dampened it has almost equally beneficial results. After an experience of three years in its use, I am convinced that one of the elements that will go far towards solving the question of the production of a cheaper milk on our farm is properly cured ensilage. It will allow, if properly stored, cured and fed, the keeping of three cows to every one now kept on the farm. I do not refer to ensilage when the water has been allowed to flow into it. There is no necessity for expensive pits in which to store the ensilage. It requires to be kept free from water and air. Mr. Hoard, of Fort Atkinson, Wis., in a recent conversation upon the subject of what was the cause of the great strides Wisconsin had made in the past two or three years in butter-making, attributed it to the increased knowledge in the production and curing, and the merits and value of ensilage as a fodder to dairy cows, as also the use of cows especially adapted to butter-making. As a paper is to be read on the subject of ensilage I shall not dwell on this subject longer, but would merely say, after giving it a most thorough test of three years, we would not be without it at Oaklands, and I am convinced that it is one of the most important factors in making the butter industry profitable.

It is with some diffidence that I approach the last requisite in profitable butter-making, namely, a cow especially adapted to the economic production of milk which can be most profitably converted into butter. This is the first paper, I think, in which I have ever touched upon this subject, and I have refrained from so doing because I was aware that self motives would be attributed to me, but I could not close this subject without doing so, and do justice to it. To such as would attribute selfish motives to me, I would say that all breeds of cattle are open to me to choose from in conducting our dairy business at Oaklands, and as it is carried on not as a "Philanthropic Society," but as a business enterprise, were I not convinced that in Jerseys we have the cow best adapted to butter-making, we would purchase what we considered were better. When it is further borne in mind that I could have disposed of my herd for at least $100,000, credit must be given me of a firm conviction, that for cream and butter the Jersey is to our minds the most profitable cow to use.

Mr. Fuller again referred to the enormous strides that Wisconsin had made in butter production, and stated that after careful inquiry he found that one of the most important

factors producing this result was owing to the introduction of Jersey and Guernsey blood, and the displacement of the native cow by the progeny of thoroughbred Jersey and Guernsey bulls. That cases were constantly being reported from the Farmers' Institutes of people who had increased their production of butter per year from 150 and 200 lbs. a cow to 250, 300 and 325 lbs. per cow per annum, and that the statement was constantly made that the cost of the maintenance of these animals did not exceed the maintenance of the common cow.

He said that it was a great fallacy to state that the Jersey cow was not a good milker; that while she did not give so large a flow of milk when freshly calved, her continuity or habitude of holding to her milk was well known wherever she had been handled, and that the cross showed this characteristic. He stated that from twenty-five to thirty pounds of milk are, as a rule, required in this country from the ordinary cow for the production of one pound of butter, whereas in the Oakland's herd, fifteen to sixteen pounds of mixed milk of a whole herd have often produced one pound of butter on winter feed; and that the reports made at the Farmers' Institutes and other meetings in Wisconsin, in the discussion of dairy matters, showed that whole herds of three-quarters and half-bred Jerseys were producing a pound of butter from seventeen to twenty pounds of milk. He advised strongly the purchase of thoroughbred bulls of either of these strains for the production of butter, claiming that experience in the United States, not only in Wisconsin but in the East showed that where a farmer had used grade Jerseys or grade Guernseys, butter-making had become a profitable industry, and cited cases where such had been done.

I reiterate what I conceive to be the most important factors in making the butter industry profitable:—

1. A better knowledge of the art of butter-making and marketing in all its branches; and in this connection I conceive the creamery to be the best educator.

2. An increased production of milk per cow obtained by a proper regard to the feeding, caring for and fixing in the cow a habitude to a prolonged flow of milk, and as an encouragement to this end, winter dairying in creameries.

3. More economic feeding of our milch cows. An important factor is the use of more corn fodder and ensilage.

4. The use of grade cows got by a pure-bred sire of a breed of cattle especially adapted to butter-making; or of our native cows who, by testing, have been shown to be profitable butter-makers, and from whom not more than twenty pounds of milk is required to a pound of butter, and as the Jerseys and Guernseys have as a race proven themselves profitable butter cows, the use of grades of these breeds.

Mr. Derbyshire.—That is the best paper I have ever heard read at one of our conventions, and I am sure you are all delighted, as I am, with it, and thankful to Mr. Fuller for his kindness. The paper is now open to discussion.

Prof. Robertson.—I have been delighted with Mr. Fuller's paper. It recommends ensilage. I would like to ask Mr. Fuller what he feeds with his ensilage to get the best results.

A.—Hay as well. We don't use roots with it. We find a tendency to scours if we feed ensilage alone.

Q.—What proportion do you feed?

A.—From half a bushel to a bushel.

Q.—And how much of hay?

A.—About 10 lbs.

Mr. Graham.—If you gave her that I wouldn't think you would want to give her anything else.

Mr. FULLER said that an experiment had been made in Mountainville, New Jersey, where they had fed a certain number of cows wholly on ensilage. They found that many of the cows had imperfect udders and many slipped their calves. The ensilage got the credit for this whether it deserved it or not. It is the same with feeding ensilage to cattle as with feeding stimulants to a man. The occasional use is helpful, but no man can go on using them continually to excess without being injured. I would only feed ensilage as an assistant but, when fed with other food, it is a most economical and valuable food.

Prof. ROBERTSON said he had found something the same bad results as those described from feeding cattle on turnips alone.

Mr. FULLER.—If cows have any trouble in the way of slipping calves, the less very cold water you give them the better. The cold chill is what does the damage. Such cows should always get dry feed. The danger in feeding roots is that you give the cattle the roots cold. That is avoided in ensilage if it is turned out of the pit.

Mr. CHEESMAN.—What is the temperature of your ensilage when taken from the pit?

Mr. FULLER.—I could not say.

Mr. CHEESMAN.—Is it about 80°?

Mr. FULLER.—If you were to take it out of the ensilage pit. But where it is cut straight down and cut off the edge it would not be nearly so warm as that.

Mr. DERBYSHIRE.—I hope there will not be any misapprehension in regard to ensilage. It is to be fed in combination with other food. For example, Johnny cake is a good thing. We all like Johnny cake, but you wouldn't like to be put on Johnny cake all winter and have nothing else. Yet it would be a very good feed once in a while, with a little molasses. (Laughter.)

Mr. CHEESMAN.—About four months ago, on Sept. 1st, Mr. Fuller held an auction at Oaklands. I don't know whether the prices on the aggregate were sufficient to encourage him in regard to the home market. Hitherto his market has been in the United States. Some of the purchasers were men in this district, and some were men from Mr. Derbyshire's district. At this sale well bred bulls were sold at $90 to $200 each. One little fellow, a son of Canada's John Bull and a grandson of old Faith of Oaklands, sold for only $90, so you see Jerseys are now within reach of the farmer's purse.

Mr. FULLER.—I say to the farmers of this country and to the men who are engaged in the butter industry, let them make up their mind what breed it is, whether Ayrshire, Holstein or Jersey, Guernsey or anything else, let them make up their mind which will produce the greatest amount of butter with the least food, and get to work and grade up the herd by that. Have the quality fixed on both sides of the sire, and you will increase the butter industry of this country and make it profitable. We are all after dollars and cents. Until you do this, you will never succeed in it, and you won't take any pride in it. The quantity required for butter, should be brought down on grass to seventeen to twenty pounds of milk to a pound of butter. I have driven through Vermont and Maine, where they have private dairies and use grade Jerseys, and seen what they are there. I have driven through Connecticut once, and the people told me that they never made a dollar until they got Jerseys, and since then they have prospered.

Mr. SPRAGUE.—The impression has got abroad through the country, though I'm not saying there is any truth in it, that we can cross the shorthorn with our common cattle and do well, but that the cross of the Jersey with the native cow is not a good cross.

Mr. FULLER.—Why? I'll tell you what it will create: a skinny, bony animal, you can see the back bone right through her. If we want a cow to put flesh on her back, she is not the one, but if she puts the fat on her back, she won't put it in her milk.

Mr. SPRAGUE.—In crossing, now, suppose you have a herd of grade Holsteins?

Mr. FULLER.—I don't know, I never used any.

Mr. DERBYSHIRE.—Holsteins are for cheese. You want to select a cow that is adapted for your particular line of business.

Mr. GRAHAM.—I have had a little experience in grade Jerseys, but not much. I have three out of a bull imported by Mr. Fred. Lingham, the cattle exporter. I must say that they haven't been what I expected. Probably that was because he was a poor bull.

Mr. SPRAGUE.—Perhaps you expected too much.

Mr. GRAHAM.—Perhaps so, but I didn't get very much. (Laughter.) The best success we have had in supplying good milk to customers have been the first grades of shorthorns on good Canadian cows, after that they go to beef. These three Jerseys I have, are insignificant looking animals.

Mr. FULLER.—There are poor Jerseys and good Jerseys, just as there are poor and good shorthorns. You have just to know whether they will transmit the characteristics of the breed or not. I don't know whether to attribute the success of your shorthorn grades to the shorthorn in them or to the native cow. The native cow, and especially those of lower Canada, take their origin from St. Malo, in Brittany, France, and the Jerseys were taken from St. Malo, so that they both have a common inheritance.

Mr. CHEESMAN said that everything depended on how an animal was handled. To show this, he referred to the fact that some of the descendants of the celebrated Rioters' Pride, whose dams were common Quebec cows, were almost worthless, because no care had been taken of them from their birth. But Rioters' Pride was the head of Mrs. Jones' herd now.

Mr. WENGER said that Smith, Powell & Co., were producing butter for which they got fifty cents a pound from Holsteins.

Mr. DERBYSHIRE.—He says so, but we don't believe it. (Laughter.)

Mr. WENGER said he saw a statement not long since of a competition where the Holsteins headed the list both for cheese and butter. It was at the Dairy Fair in New York.

Mr. FULLER said it took forty-six pounds of milk from the Holsteins at the New York fair, to make a pound of butter.

Mr. CHEESMAN.—It took forty-eight pounds at the Toronto Industrial Exhibition, in September, 1886.

Mr. FULLER.—So far as price goes, I know a man in New York who gets $1.00 a pound for his butter—Jersey butter. There are the Darlingtons, who get seventy-five cents to $1.00 per pound, and I have eaten some of it, and I wouldn't give ten cents for it. They have established their reputation and they trade on it. When we started we could only get three cents a pound more for our butter than current prices. Now we get forty to forty-five cents, and expect to get it up to fifty cents per pound in the winter. (Laughter.) He read some analyses of milk, made by Prof. Alvord, of Massachusetts, showing the Jersey to contain the least water and the greatest amount of fat.

Mr. WENGER.—How many pounds of milk does it take to make a pound of cheese?

Mr. SPRAGUE.—Ten is the average.

Mr. CHEESMAN.—Seven is the Jersey amount.

Mr. GROFF.—I am just beginning to think that a man can live on butter alone, and that he does not need to eat any beef. (Laughter.) I am proud of Mr. Fuller. I wish we had more men like him in the country. I think if he would take up grade Shorthorns, he would do pretty well with them

Mr. FULLER said that when he was beginning his herd at Oaklands, he had not been able to supply the demand upon him, and he had sent and bought thirty head of Shorthorn grade cattle, and he had made a fair trial of them, not being prejudiced, either in their favour or against them, and he had found that they did not pay him. He had made an experiment with ten Shorthorn grades against ten Jersey grades, and he found that he had been able to keep three Jerseys where he could only keep two Shorthorns. Unfortunately, in running the milk through the separator, he had not kept track of the amount of milk required for butter in each case. But he had found from experiments with them, that from ten gallons of Jersey cream, he got thirty-two pounds of butter; from a like amount of Jersey grade milk, he got twenty-four pounds, while he did'nt get twenty pounds from a like amount of milk from the Shorthorn grades, and the latter were sixty or seventy dollar cows, too. They taught him that he did not want grade Shorthorns for milking. He saw that grade Jerseys would produce, by actual experience, 600 lbs. of butter per annum during her lifetime. And he thought that a good cow that had given one butter for six years, was entitled to an honest burial just as much as one's children.

Mr. CHEESMAN said that Mr. Tisdall, in the County of Surrey, England, had been keeping a milk record of his cows since 1848, and the result was 8,000 lbs. of milk a year. This was the result of the very best Shorthorn breeder of dairy strains which England could produce at the present day. Little Faith of Oaklands, a cow of 750 lbs., gave in 300 days, 9,300 lbs.

Mr. GROFF said that they should not forget that the Shorthorn gave fat to her offspring.

Mr. FULLER.—You have your work to do, Mr. Groff, and you do it fine. We have our specialty, and we take pride in doing it well.

Mr. GROFF.—Oh! I know you are clever. (Laughter).

Mr. FULLER said the deepest milkers were the most economical feeders. To be a good deep milker a cow must have good digestive organs. He claimed that you could not have a good milk animal that was a good beef animal, and keep it up from generation to generation.

Mr. GROFF.—Can't you get this animal in a Shorthorn grade? I am satisfied that if you took up the Shorthorn grades, and fed them well, you could.

Mr. FULLER.—I told you the result of my test with the Shorthorn grades.

Mr. GROFF.—Which will produce the most money. The cow that will give milk and then beef, or the cow that will produce nothing but butter?

Mr. W. A. MACDONALD said they would probably like to hear a word from one who was a champion of all the breeds. (Laughter.) In his opinion, there was a great deal of time lost in talking about milk and butter, and cheese breeds of dairy stock. Any breed that was good for butter was good for cheese. The only difference between the breeds was that one breed produced more water in its milk than another. The relation between the fat and solids was pretty constant. If they added twenty-five per cent of water to Jersey milk, they would have Holstein milk. (Laughter and applause.) He had come to the conclusion that the general purpose breed was a myth. (Laughter).

Mr. FULLER said this bore out his theory that the percentage of fat was a sure indication of the quality.

A vote of thanks was tendered to Mr. Fuller for his admirable paper, and the meeting adjourned till 10 a.m., Wednesday.

WEDNESDAY MORNING.

Upon the resumption of business at 10 o'clock Wednesday morning, Mr. Derbyshire presiding, Mr. Sprague moved "That the thanks of this convention be tendered the authorities of the Ontario Agricultural College for their kindness in showing us over their stock and buildings." The resolution was carried unanimously.

REPORT OF THE AUDITORS.

Your Committee appointed to audit the books and vouchers, beg to submit that they have audited the Secretary-Treasurer's books and find them correct. We find the Treasurer has the sum of $249.54 on hand at present.

Receipts.		*Expenditure.*	
Balance in hand	$ 175 67	Public meetings	$ 94 50
Members' subscriptions	82 00	Deputations	29 50
Government grant	1,000 00	Instructor's salary	500 00
		Convention—	
		Reporter's fees	35 00
		Advertising meetings	18 50
		Advertising for Instructor	6 37
		Butter inspection *re* salt test	22 00
		Directors' expenses attending meetings	283 50
		Printing and stationery	4 00
		Auditors	10 00
		Postage and telegrams	4 76
		Balance in hand	249 54
	$1,257 67		$1,257 67

January 18th, 1888.

G. J. BRILL,
JAMES CHEESMAN, } *Auditors.*

On motion of Mr. Sprague the thanks of the convention were tendered to Mr. Moyer for his friendliness, courtesy and willingness to supply information at all times during his term of office as Secretary of this Association.

Mr. Moyer thanked them for the kind words that had been spoken in recognition of his services.

THE INSTRUCTOR'S REPORT.

GENTLEMEN,—Having accepted your appointment in the closing days of April to act as instructor to the Creameries' Association of Ontario, I lost no time in arranging the work of systematic visitation. Accordingly, I began work on May the 10th, at Whitechurch, and continued the visits to Teeswater, Londesborough, Clinton, Brucefield, Seaforth, Roseville, Galt, Ayton, Walkerton, Blake, Parkhill, Wyoming, Wanstead, Amulree, Crosshill, St. Jacobs, Breslau, Haysville, Holstein, Dromore, Deemerton, Eden Mills, Iroquois, Ventnor, Inkerman, Cass Bridge, Connaught, Beoreuil, Embrun, Ameliasburgh, Belleville, Bethany, Oaklands, Owen Sound, Collingwood, Penetang, Chatsworth, Elmwood, Ailsa Craig, Kirkton, Armow, Ripley, Formosa, Picton, Cedarville, Essex Centre and London.

Though improvement is everywhere manifest in buildings, plant and general details of management, there are very few creameries entirely beyond criticism. The progress of the past season has been very satisfactory when viewed as a whole, very much having

been done to raise the standard of the creamery business. Some of the creameries had entirely new buildings, many had been reconstructed and extended, with great gain both in general convenience and coolness. At one of these there was a complete case for cold storage on a level with the work-room, and equally convenient for loading on delivering days.

A great change needs to be made in the unimproved buildings to make them more convenient, cleaner, cooler, sweeter and suitable for their work. In several of these the fluctuations of temperature inside buildings were as great as those without, the drainage was defective, the tools allowed to lie around in a disorderly and dirty state, while the arrangement of plant was such as to render working harder and disagreeable.

The change in manufacturing plant and tools during the season was very gratifying, quite a few factories having abandoned the use of their old cylindrical churns to adopt the well-known square box factory churn. In addition to these some have added power workers. Many have in use the Cherry Test churn, and one had adopted the Oil Test. I must not omit calling attention to a very peculiar form of churn met with, as it had never been washed properly since it was made. It was a square box with a shaft through the centre, carrying beaters arranged diagonally like the conveyer in a flour milling bolter. It was foul, and quite impossible to make good butter in it.

The water in most cases was fairly good, some excellent, and several exceedingly poor, and quite unfit to work with. In the establishment of new creameries the water supply should be carefully kept in view, as any mistake in the choice of a site in this respect cannot well be corrected after.

Many of our butter makers, especially those east of Toronto, operate their factories on the separator system, which requires the gathering of the whole milk. It may be remarked here that in the east dairy herds are somewhat larger, and the distances from which milk is gathered are less than is the case in western counties.

The condition of creamery education is a matter of great moment, and a great deal remains to be done toward making it more systematic and thorough. It is much to be regretted that patrons and proprietors should be so eager to reduce the rate of wages paid to makers. This leads to frequent changes, and every season sees new makers in factories whose make had stood high, and received the highest awards in the great fall exhibitions. The thermometers in use in a few of our creameries were found on testing to be several degrees in error—a serious defect in handling cream and in churning. In more than one instance cream was found in a very bad condition, from which it was quite impossible to make choice goods.

The introduction of pure bred dairy stock has made very encouraging progress during the year. In the east, central and north-western counties a large number of Jersey and Holstein bulls and heifers have been purchased, and also a sprinkling of Ayrshires. The long drouth severely checked the operations of many of our creameries during the excessively hot weather. The experience of average years was this last year greatly aggravated in July and August, scarcely any food could be gathered from our pastures by the stock. The terrible shrinkage of food at this season of the year is a matter demanding your gravest consideration. The insufficiency of the food supply during the middle of the season has often crippled the operations of the creamery. Unless we can show farmers a cheaper way of producing milk the creamery industry will not develop very rapidly. It would be a generous and useful act for your board to institute some course of action to encourage the general cultivation of green fodder crops for feeding stock after June. The progress of ensilage during the past year is a happy phase, and will give the convention the opportunity of doing something of a more practical kind than discussion only. The time has come for us to make winter feeding cheaper if we are to keep in the front rank as butter producers.

The desire on the part of hotel-keepers and private consumers to obtain butter direct from the maker is growing. Some of our creamery men already have private customers for a large part of their make. Everything possible should be done to cultivate this trade, for in the home market we must ultimately look for our butter customers. The excessive competition in English markets, and our great distance from

them will always place us at a disadvantage as compared with older rivals like Denmark, Sweden and France.

STATISTICS OF TWENTY-ONE ONTARIO CREAMERIES IN 1887.

Creameries.	Quantity made.	Average price.
	Lbs.	Cts.
Holstein	32,500	19.50
Seaforth	56,470	
Londesboro'	75,000	
Kirkton	32,720	
Dromore	33,048	20.18
Parkhill	12,180	22.50
Walkerton	40,000	
Bethany	12,536	
Ameliasburg	7,500	23.75
Owen Sound	30,800	22
Ayton	100,000	
St. Jacob's	73,853	
Teeswater	82,000	
Cass Bridge	22,823	20.41
Amulree	21,000	
Armow	12,800	
Ripley	33,000	
Roseville	4,200	
Formosa	60,000	
Clinton	20,000	
Cedarville	2,200	
Total	764,630	

This list is incomplete. The number of creameries in operation in 1887 was about 56.

The work before this Association is growing, and to till the field thoroughly requires regular and systematic visiting and instruction. Besides this we need to institute some sort of competition among farmers in raising cheaper food, to keep more animals on smaller areas, and to work up to a more economical cow than we use at present. This and other effort will call for greater outlay of money, and extend the work of this Association. In conclusion, I beg to thank those gentlemen who received me so cordially, and to testify to their willingness to learn and receive the aid which your board offered. During the past season I have travelled over 7,000 miles, covering much of the ground twice. The demands of our industry are ever widening, making new claims, and enlarging the sphere of its work. With us sunset never comes, some unfulfilled task always remains. The faith, energy and determination that organized this Association, will see in its future hope, opportunity and material enough to fully satify their ambition. Let us labour and achieve till the harvest is gathered.

The whole respectfully submitted.

GEO. BROWNING.

Mr. Sprague.—There has been some discussion regarding the cultivation of the home market. Let a man think of the amount of butter required by a town or city. Why, it is enormous. In our own creamery we have endeavoured to cultivate that trade to some extent. This last year we have sold every pound of butter to the home trade, and we could have sold much more if we had had it. Take the city of Brantford, and the amount of butter consumed in one single year is half a million pounds.

Mr. Derbyshire said the points brought out in the report were very valuable. He was satisfied with what the instructor had done in the east. He had called upon him and had received instructions regarding the locality, and he (Mr. Derbyshire) had noticed

a marked improvement in the localities which the instructor had visited. In two or three of the creameries there was an addition of two or three cents per pound in the quality of the butter in one month after his visit. We wanted to place on the tables of the consumers a fine quality of butter, and he was satisfied we could work up a trade and bring our butter prominently before the people. He gave instances of persons in the United States who had made large prices by supplying a good article, notably Mr. Hoard, of Wisconsin, who got thirty-three cents at the factory, and they could easily see that it would have to be retailed at a pretty good figure.

Mr. BRILL said he understood that this association was to have had a competent instructor, and he had been disappointed. In several factories which he had visited the butter had not been up to the mark. He thought he should go to the Experimental Creamery in Guelph and learn how to make butter. Besides this, he did not stay long enough in one place. Letters had been received from across the Atlantic, finding fault with our instructor here. They did not want to have it go abroad that they had a poor instructor. They wanted an instructor who would give a reputation to the butter

Mr. WENGER said Mr. Browning had been at his place, and he had no fault to find with him. He would like to know which was the best, the cherry test or the oil test. He also would like to know the results of the salt tests made last winter at the College. They had never received any report of them.

Mr. DERBYSHIRE.—Anyone on the floor will answer ; which is the best, the cherry or the oil test ?

Mr. MOYER said that factories would have to come to the oil test, and the test should be made every day. In that way they did away with a great deal of suspicion and unpleasant feeling.

Mr. DERBYSHIRE—We want a simple way of doing the business. The oil test is the simpliest and handiest. Of course Mr. Moyer is right ; if we could make the test every day it would be better, but make the test once a week and pay for the week's milk on that test. You need not let them know what day you will make the test on. Once a week is as often as you'll get around.

Mr. MOYER—There is the same trouble once a week as once a month. There is always a suspicion. If you have it every day you do away with this suspicion. It is only an hours' work and you could hire a boy to do it.

Mr. CHEESMAN.—Did Mr. Wenger get any explanation from Mr. McHardy about the oil test up at the farm ?

Mr. WENGER.—He stated that during the greater number of months the direct results varied but little. The sum total of butter and tests nearly agreed. He attributed it principally to the fact that the farmers found out when they made the tests. (Laughter.)

Mr. DERBYSHIRE said, that with reference to the salt tests made at the farm at the time it was examined, Prof. Robertson was at the farm, and the test had been made under his superintendence. After this he had gone to the Intercolonial Exhibition, and afterwards had retired, so that the report had been delayed. Now the report had been printed, and every member would get one of these reports given him.

Mr. COOPER.—I would like to have the report read at this meeting.

Mr. ROBERT RAMSAY, from Eden Mills, said that they were wandering a little from the question. They were considering the report of the Instructor. He thought that the Instructor should go to the Guelph School for at least six months to learn something. He did not know anything about butter making.

Mr. S. R. BRILL, of Teeswater, said the Instructor had not taught him anything.

Mr. JAMES PHILP, Dromore, said that one misty morning the Instructor had come and visited him for a few hours. Of course he (Mr. Philp) did not know anything about butter making. (Laughter.) He believed he had received a certain amount of benefit

from his instruction. He had not stayed long with him, but he had stayed longer with other factories where his presence was needed more.

Mr. SPRAGUE said that the Instructor had visited him twice. He had not stayed long, but he had no fault to find with him. He had inquired minutely into the working of the creamery and had offered some suggestions of things that he had overlooked. He considered that the Instructor knew his business.

Mr. ZINKANN asked if the water used in the Ripley creamery was so bad as to injure the butter made there?

Mr. BROWNING.—The water in the creamery where that butter was made got bad in the middle of June. I wanted them to close down, and they did so for two and a half weeks. The water was bad, thoroughly bad. About the middle of September I went in and said, "If you make butter with this water you will never sell a pound of it." The salesman said, "Go ahead; we can sell it." You could smell the water in the well when you opened the door.

Mr. ZINKANN said this was true. The water was bad, but the Instructor should not have allowed them to make butter with such bad water.

Mr. BROWNING.—I hadn't charge of the factory. The salesman said, "So long as you can make the butter we can sell it."

Mr. MOYER.—He says the tubs were chosen with bad judgment.

Mr. BROWNING.—They were 70 lb. spruce tubs, and cost 32 cents laid down at the factory. I used the spruce tubs at the beginning of the season, but I got over that, and afterwards used the tin lined.

Mr. MOYER said he had always recommended tin lined tubs, and he was glad they now saw that he was right.

The Instructor's report was adopted.

EXPERIMENTS WITH SALT.

The report of the Butter-Salt Experiments made at the Guelph College Creamery was then read as follows:

That the influence of salt on the quality of the butter to which it is added is not confined to the imparting of a salt flavour, has long been admitted. A few tests were undertaken during the season of 1886, at the Agricultural College Creamery, from which it was expected that conclusions useful for the guidance of butter-makers could be drawn; but little steady light is thrown by them on the disputed point as to which salt is the best for preserving butter. Many defects in quality, recognized after the lapse of time and which have been attributed to the use of unsuitable salt, will have to be laid at the door of some other condition or cause.

On August 12 several lots of butter were weighed from one churning and salted with salt of as many different brands, at the rate of one ounce per pound of butter.

On August 12 the same was done with the butter from another churning.

On August 15 and 21 two tests were prepared for, in a like manner, with the use of three-quarters of an ounce per pound of butter.

On August 26 and September 3 a rate of half an ounce of salt per pound of butter was applied in the same way.

From four to six lots of butter were weighed from the same churn, on each of these six occasions.

The butter was packed in tin-lined tubs and kept in a cellar where the temperature was purposely made to fluctuate from 40° to 55° Fahr., to try its keeping quality.

The Canadian makes of salt used were Coleman's, Kidd's, Rice's and Rogers'; the English makes used were Ashton's and Higgins'.

At the convention of the Ontario Creameries Association held in Toronto in March, 1887, F. W. Fearman, Esq., Hamilton, James Park, Esq., Toronto, and Thomas Johnstone, Esq., Toronto, were appointed a Committee of Examination. The judging was deferred till 22nd and 28th March. The different lots were known to the judges by numbers only, there being no indication on the tubs as to the kind or quantity of salt used. The object of the judging was, to arrange in the order of their merit the different tubs in each lot from the one churning.

There was the widest difference of opinion in some cases among the judges as to the relative merits of the different tubs in the same lot. Some butter salted with every one of the different brands of salt was awarded by merit the first place in at least one of the several comparisons. No one kind showed such superiority over the others, on the average of the tests, as to deserve special mention. The average merit of the Canadian salt was slightly higher than that of the English, but the average loss of weight by the addition of salt and working was slightly in favour of the English article.

In a comparison as to the qualities of the butter from using different quantities of the same salt in several lots from one churning at the end of six months, the butter salted three-quarters of an ounce to the pound was placed first; one ounce to the pound second; one-half ounce to the pound third; one and a quarter ounces to the pound fourth; one-quarter of an ounce to the pound last and very inferior.

In cases where the salt was slow of dissolving and where the butter had been left without the addition of fresh brine, the resultant porosity of body caused it to go off in flavour.

Contact between the salt-plaster and the wood of the tub covers seem to convey and impart a woody flavour to the top of the butter.

I would recommend—

I. The use of pure, clean salt of as nearly as possible uniform sized grains, which dissolve readily and completely before the butter is worked the second time.

II. The use of a parchment or parafine paper covering on the top of the salt-plaster.

III. Attention to the frequent brining of the tubs to replace the moisture removed by evaporation.

IV. Care in keeping the temperature of the store room steady.

Mr. James Brill said that he had been one of the examiners, and he had not seen this report from the time the tests were made until now. It seemed to him very incomplete.

Mr. Cooper said that the report showed that the Canadian salt was just as good as the English. A man should use his own judgment. Canadian salt only cost half the money, and if we had as good results with it, why not use our own article? He was interested and was here on business.

Mr. Moyer.—Parafine paper is recommended there. I heard a gentleman say he did not like it at all. Have any of you had any experience of it?

Mr. Graham.—I have never had any experience of it in tubs, but I have used it in packages. It is very convenient, except when the butter gets too warm. If it warms it will stick to the butter.

Mr. Sprague said the Canadian salt was not nearly so good as the English. He used Higgins and Ashton's.

Mr. Cheesman.—Tell us how you use Ashton's.

A.—I think they are kind of running on their reputation. I haven't found it as good lately. My experience with Canadian salt is that it don't readily dissolve. It seems to have a large amount of lime in it. Ashton's goes on the butter like snow; it melts. You loose the grain and you have the brine.

Mr. CHEESMAN said that they should bear in mind the fact that in cases where butter had been left without the addition of fresh brine the consequent porosity caused it to go off flavour. He called attention to the clause in the report which recommended the use of a pure, clean salt of as nearly as possible uniform sized grain which will dissolve readily and completely before the butter is worked a second time. He was not personally interested in salt, but he would state that a salt made in Goderich by his friend Mr. Rice answered these conditions. He had gone through his works and had been shown a new patent for making chemically pure salt, that is salt that is free from lime and insoluble matter. Mr. Rice had made very good salt before that. The chlorides of magnesia and lime were what did the mischief, and sometimes land plaster was left in. In this respect there was little difference between Higgins and Ashton, but on this continent the salt of The Diamond Crystal Salt Company, St. Clair, Michigan, and one other, that of Mr. Rice, were the only ones that were chemically pure in this respect.

Mr. COOPER said that Rice's was a good salt, but they used chemicals to purify the brine.

Mr. CHEESMAN.—He does it by a mechanical process.

Mr. COOPER.—But this report shows that Mr. Rice's salt is not more chemically pure than some other Canadian salts.

Mr. CHEESMAN.—At the time this test was made Rice was only making a salt of 98% pure sodium chloride, not the salt he is making now.

The convention then adjourned till 2 p.m.

CREAM BY THE CENTRIFUGAL SYSTEM.

At the afternoon session the following paper was read by Mr. R. J. Graham :

Mr. Graham said, cream by the centrifugal system is a comparatively new plan of cream separation. The art of separating cream from milk by centrifugal force is very simple in principle, viz.: The milk flows into a cylinder which revolves at from two to seven thousand revolutions per minute, and the cream being lighter than the skim milk comes to the centre of the cylinder, thence is forced out by a continual inflow, and the centrifugal force through a tube arranged for the purpose to a vessel provided for the cream. The skim milk being driven to the outer part of the cylinder is forced in like manner through another tube to the vessel required for it. Thus, after the machine is once in operation, a continual in and out flow and separation takes place till the whole amount desired to be separated, has gone through the machine ; from 200 to 2,000 pounds per hour, according to the make and size of the machine. There are several kinds of centrifugal separators (mostly of Danish origin) but all on the same principle, from the little hand separator extracting the cream from 200 pounds of milk per hour, by turning by hand with a crank, to the large Burmeister, separating as high as 2,000 lbs. per hour. Those most in use in Canada are Backstrom, De Laval, and the Burmeister & Wain, which are all capable of doing good work. These machines are operated usually by steam power, although I worked one last season by horse power taking two horses or an ordinary sweep-power.

The first advantage by the centrifugal system is rapidity of separation. By the setting system it takes from twelve to fourteen hours to secure the cream which by this method can be obtained in as many minutes.

Another important advantage, centrifugal cream is superior in points of cleanliness and sweetness as well as uniformity of age which I consider important in making a fine article of butter. Another point in favour of this system is the saving of time and labour, as by setting the milk many vessels are required and must be kept extremely clean ; also a large expense and labour in procuring ice and placing it around the vessels containing the milk, which must be performed to obtain the best results. Another advantage is more cream. By the centrifugal system all the cream in the milk can be

extracted, or nearly so, which cannot be obtained by setting. Cream rises during the lowering of the temperature of the milk, and if the circumstances are not always identical the same results cannot be secured. Thus, for example: One day the milk is set immediately after milking by straining into cans, say at 90 degrees, then gradually cooled to 40°. This will give good results. Perhaps next day the milk will not be strained till it has gone down to 70°, and then it may be the dairyman is anxious to secure his grain or hay and neglects to put the ice around the milk, causing a considerable loss of cream. Another loss in cream raising is caused by difference in dairy cattle, as it is a well-known fact that the globules of cream in Jersey milk are larger and rise faster than those in milk obtained from Holsteins, and in the same manner the milk from individual cows of any herd will vary, causing want of uniformity of age in the cream. Another point in its favour is a more uniform quality of butter may be obtained, with less liability of being contaminated by foul odors so much dreaded by butter-makers. As by this system the cream being immediately extracted from the milk, while yet warm, then cooled, is ready for the churn in a much less time than by the setting method. This statement, as to its better quality, is borne out by the fact that Danish and Swedish butter (said to be the best in the world) are made chiefly by this system. The skim milk is also more valuable for feeding purposes, being yet warm after separation. It is also valuable for culinary purposes and as a beverage where it can be delivered sweet in towns and cities. There is also a saving in buildings, very little room is required for a separator to the amount needed for setting in pans or cans.

We now come to the disadvantages of this system. The greatest difficulty being to secure enough milk in an area sufficiently small to pay for hauling the milk to a factory and returning to the patrons the skimmed milk.

The cream gathering plan from set milk is able to operate the milk from a much larger territory. The cream only being carried.

Another drawback is the expense, as one of these machines with proper motive power will cost about $500; thus placing it beyond the reach of a private dairyman, unless he keeps at least twenty cows, which the ordinary farmer is not always prepared to do.

Now we come to the other method, cream-raising by setting milk.

There has been a wonderful revolution in this system during the past few years, and many discussions have taken place to prove whether it is more profitable to set milk deep or shallow, and I believe no definite decision has been arrived at, except the shallow pans take more room and the milk is more exposed to atmospheric influence than the deep-setting pan. But lately the discussion has not been on these points, but has resolved itself into the best kind of a can to secure the best and most rapid results with least exposure to foul odors. The merits and demerits of these cans have been fully dealt with previously, but it is sufficient to say no dairyman should use the old time shallow pans and set them in a pantry or cellar with vegetables and provisions to give them an unpalatable flavour; nor should one desiring to make good butter allow milk to stand where foul odors may reach it, or allow the cows and stable to be in a filthy condition, with their udders covered with manure and milked without cleaning them thoroughly; nor will they feed their cows on unclean, musty food, or vegetables that will affect the milk; such as turnips, cabbage, etc., nor allow them to imbibe the barnyard water. Keep their stables ventilated and give cows pure, sweet, wholesome air, food and water, which are necessary to secure good milk, without which, pure cream cannot be procured, much less clean flavoured butter. One great drawback to the cream-gathering plan is the unevenness of quality and age of the cream, unless some more satisfactory way than the present test methods be adopted.

Mr. Herbison.—I would like to ask Mr. Graham how he tests the cream?

A.—We churn it. We have closed tubes, and the name of the patron is on each tube.

Q.—Do you pay according to the value of the cream?

A.—No. According to the weight of the milk. If we find a certain farmer's milk is not up to the standard we tell him he had better get his milk out of here or feed his cows better.

Q.—Do you give him the skim milk?

A.—We don't, but some do.

Q.—What do you do with it?

A.—We use it to make cheese.

Mr. GROFF.—That would be a general purpose factory, wouldn't it?

Mr. GRAHAM.—Yes, but I don't use any cheap molasses in it. (Renewed laughter.)

Mr. CHEESMAN.—Before you had a separator did you buy milk for the purpose of making butter?

A.—No, sir. I have never had any experience of that kind by which I could compare the two systems.

Mr. WENGER.—What is the expense of making a pound of butter where you have the cost of hauling the milk and returning it?

A.—I can tell you the cost of hauling and returning the milk and you can figure the rest yourself. In our section it costs fifty cents a thousand, or a dollar a ton.

Mr. WENGER.—How far can you bring any milk for making butter that way? How many miles?

A.—One factory we were in gathered from an area of about five square miles, that is, five miles each way to the furthest limit. We ran seven routes, and gathered the milk from 1,000 cows. The factory I have now is a smaller concern, in which a few of the neighbours and myself are interested.

Mr. CHEESMAN.—How many cows do you gather from?

A.—About two hundred.

Q.—What is the average per day gathered?

A.—The best is about thirty pounds per cow per day. If a man has ten cows and gives us 300 pounds of milk per day, we consider they have done remarkably well. We have had them to do it for three months, but they don't do it often. We have seen as much as 5,900 pounds of milk from twenty cows for seven months.

Q.—Can you state how long the best cows you have will milk? How many months?

A.—We always milk our cows ten months of the year, and we sometimes run a little over ten and a half months. If a cow don't milk ten months in the year we don't keep her.

Mr. CHEESMAN.—What quantity of milk do they give?

A.—They never run less than 5,000 pounds per cow.

Q.—For the factory season?

A.—Yes. We have run up as high as 5,800 pounds each, with forty cows, for seven months.

Mr. DERBYSHIRE.—What do you do with the skim cheese?

A.—We send it to the old country.

Mr. DERBYSHIRE.—It would take a crow to digest it. How much do you get for them?

A.—The last I shipped averaged five cents a pound.

Mr. DERBYSHIRE.—You have never used them for cannon balls?

A.—Never in our section of the country. (Laughter.)

Mr. DERBYSHIRE.—The reason I speak is that we always oppose skim cheese and anything but the finest article that can be produced. We think that is our business. It hurts the reputation of the country, though a little gain may be made by the particular factory, yet it is against us in the long run.

Mr. CHEESMAN.—How much does it cost to make?

A.—Forty cents a hundred for the furnishing, and the labour we don't count much, as there is not much labour about making it. We charge one and a quarter cents for manufacturing, and three-quarters of a cent for hauling and selling and insurance upon ten pounds of milk, and we take ten pounds of milk as the standard for a pound of cheese. This year we sold the cream wholesale for ice cream purposes. Last year skim cheese in the fall brought pretty good prices. I sold some September skim cheese for nine cents per pound.

Mr. DERBYSHIRE. —Did you ever sell that party another cheese?

A.—Yes, sir; and that party was the president of your Eastern Dairyman's Association. (Laughter.)

Mr. CHEESMAN said that this skim cheese matter was a very important one to creamerymen. Mr. Graham made out the value of the skim milk to be 18¾ cents per 100 lbs. Professor Henry, of Wisconsin, had been making extensive experiments to determine the value of skim milk for feeding hogs, and he had sold hogs at four cents a pound live weight. In 270 days they had made 280 to 300 lbs. of pork per hog; and he estimated from this the value of skim milk at 22½ cents. per 100 lbs.

Mr. GRAHAM.—When they sold at four cents, what did they pay a pound for the pork in the first place?

Mr. CHEESMAN.—I can't say from memory. The object of the experiments was to show the difference between sweet skim milk and buttermilk. The buttermilk proved to be worth only 14½ cents. per hundred, with the same combination of cornmeal and shorts.

The CHAIRMAN called attention to the fact that they were now discussing the centrifugal system.

Mr. SPRAGUE said he wished to add his testimony to that of Mr. Graham in favour of the centrifugal machine. He and Mr. Graham were neighbours almost. He (Mr. Sprague) had given the centrifugal process his attention in the fall of 1879. In the spring of 1884 he had bought machines and had been using them ever since, and there was no nicer way in the world. If there was any bad butter made in the country, that butter was spoiled in the cream raising. (Hear, hear.) If there was any bad butter made with the separator it was the fault of the butter maker. He wished it was more generally in use. It would bring up the reputation of our butter in the foreign market. There was no system in the world that would give such fine butter and such a large product. The cost of the machine was expensive, but at the same time the separator once procured would last a hundred years. The expense was only in the start. In regard to wear and tear, the expense was merely nominal.

Mr. MACDONALD.—Do you sour the cream?

A.—Sometimes.

Mr. CHEESMAN.—Tell them how you treat the cream.

A.—The cream is taken and put into a refrigerator at about 52°. It is left about twenty-four hours when we are making sour-cream butter. The cream you churn this morning you take to-morrow morning.

Q.—How far down do you draw?

A.—About seven miles.

Q.—Do you pay the same for every cow's milk?

A.—We get four cents a pound for making butter and two cents a-pound for cheese. The patron finds that he is getting say 83 cents a hundred for milk; he is satisfied. We have paid 70 cents to $1.20 per hundred to our patrons.

Q.—Do you buy the milk from the patrons?

Mr. SPRAGUE.—No, sir; but it realizes, as I said, from 70 cents to $1.20 per hundred.

Mr. GRAHAM.—He charges four cents for butter and two cents for cheese, that is for the manufacture. He gets paid for drawing the milk. You can see that it is a double price for drawing the milk.

Mr. WENGER.—I beg to differ, because the expense of drawing at the Model Farm is $4.51.

Mr. DERBYSHIRE.—There's no doubt Mr. Sprague has worked the thing down to as fine a point as he possibly can.

Mr. WENGER.—Do you make as much butter out of the sweet cream as out of the sour?

A.—I hardly think it. I have tested the thing several times. I have got as good results from sweet cream as from sour; and I have mixed it at other times; but my impression is that we get the best results from letting it stand for twenty-four hours.

Mr. MACDONALD.—Do you get more from the sweet milk butter than sour?

A.—Well, I think so—yes.

Q.—How much more?

A.—I think the value of two cents a pound more.

Mr. GRAHAM said that the sweet cream buttermilk was a good deal richer than the sour cream buttermilk.

Mr. SPRAGUE.—You set a can of milk and in 30 minutes there's cream gathered to the surface, and from that time cream globules are rising up all the time. The consequence is that we have globules of different ages, some only one minute old, and others twenty-four hours old. That cream is taken and put with the cream from a lot of other cans, and more acidity forms in the body of the cream. The buttermilk taken from the separator is a rich buttermilk.

Q.—Do you use your buttermilk or send it to your patrons?

A.—When we use sour cream we send the butter milk to the patrons.

The CHAIRMAN.—Mr. Brill said there was only one factory in Western Ontario where they made skim cheese.

Mr SPRAGUE said he did not want to be considered an outlaw. (Laughter). If a poor man wanted cheap cheese he had a right to have it. They sold it for what it was. There was room for everybody in the world, and for every kind of business that was legitimate.

Mr. DERBYSHIRE said that the reason why he always had and would oppose skim milk cheese was that we wanted to work up a good market by producing a fine article.

Mr. MOYER said he would like a little more butter, and not so much cheese, in the discussion.

Mr. WENGER was called upon to deliver an address on the "Package and Storage of Butter," and said:—Mr. Chairman, I came here to ask questions. Unfortunately for me at a meeting of the Board of Directors I was talking about a butter tub which I had

seen, and by some one and by some means they got me down to talk about butter tubs. We have three or four different kinds of tubs in this country. There is the old fashioned firkin with the box and bottom covered in, the spruce tub, the hand made white ash tub, and the tin lined tub, and also oak firkins. Which is the best for the English market? There seems to be a difference of opinion between the eastern and western buyers. The eastern men prefer the spruce tubs, and the western prefer the tin lined tub. Why this should be I don't know. In my experience I have not found the eastern men right. With the spruce tubs sometimes the butter along the sides has contracted a woody flavour. I was induced this last year to pack some tin lined tubs, and the June butter packed in tin lined tubs was sweeter than the July butter packed in spruce tubs when opened in the fall. I simply put this question, "Which would pay the best?" We have buyers interested in shipping for other markets. I would like them to give us their opinion.

Mr. MOYER spoke strongly in favour of tin lined tubs.

The CHAIRMAN.—Mr. Wenger has only spoken of the tubs, How about the storage?

Mr. WENGER said that at the last convention he had been given to understand that they were to keep the butter through the summer in a cool temperature. With that object he was building a large pan in the ceiling through which spring water would be carried, and by that means he expected to have his store rooms cooled to the temperature of between 50 and 55 degrees. He proposed to have tin lined tubs with white ash covers filled with $1\frac{1}{2}$ inches of the top, to keep filling in with brine constantly, and he believed that he would have June butter in the fall with all that nice pleasant aromatic flavour that the President spoke about.

Mr. CHEESMAN.—At what temperature?

A.—From 50 to 55 degrees. In the latter part of the season the temperature may go down a little, but it is not the cold that hurts the butter, it's the variation from one temperature to another.

Mr. SPRAGUE said they ought to get their butter off their hands as soon as possible. After September it was a little dangerous to hold it. They ought not to hold it for speculation.

Mr. WENGER.—Suppose the buyers don't come along! This last year the buyers never showed up until they thought prices had touched rock bottom.

Mr. RAMSAY.— Wouldn't butter that is kept well from the air do as well without brine?

Mr. WENGER.—No. It would be sure to get tallowy.

Mr. HERBISON.—Don't these tin-lined tubs get rusty?

Mr. WENGER.—If they are not properly sealed, they will, but we hold the manufacturer of the tub responsible for that. It is important to thoroughly tin the metal used to line the tubs with. I had a letter some time ago from an English buyer, and he advised me to keep my butter stored here, that they did not want butter sent across the ocean in the hot weather. If a dealer takes the butter and spoils it, my reputation is injured.

Mr. CHEESMAN.—Are creameries not known by their brands just as cheese factories are?

The CHAIRMAN.—They are known by their brands, the buyer's brand, not the manufacturer's brand.

Mr. COOPER.—The manufacturer should have a brand, and have it known.

Mr. WENGER.—What would be the use? They would scrape it off and put their own on. We can't help ourselves. The butter belongs to the buyer after he has bought it. I believe that we could have an Ontario package of our own, a good sound package which foreign buyers will know is ours.

Mr. MACDONALD said that in Europe they made no difference as to the wood they used for the tubs, as they treated it so as to take away the woody flavour. Each kind of wood required a different treatment.

Mr. BRILL said that Mr. Macdonald was mistaken. We must adopt tin-lined tubs. He had used them for over six years.

Mr. SHANTZ.—What size is preferable for tin-lined tubs?

A.—Fifty to seventy pounds would be a good uniform size.

Mr. MOYER urged upon the butter manufacturers to send in their returns to Mr. Blue, at the Bureau of Industries, Toronto.

Mr. DERBYSHIRE then reviewed the proceedings of the Convention, and votes of thanks were passed and tendered to the Mayor and Corporation of Guelph for the use of the town hall, to the railways for reduced rates, to the gentlemen who had read papers, to the retiring officers and to the press for good reports, and the Convention adjourned *sine die*.

BY-LAWS OF THE ASSOCIATION.

The Officers of the Association shall consist of a President, Vice-President, Secretary and Treasurer, or Secretary-Treasurer, and thirteen Directors.

The President shall preside at all meetings of the Board of Directors when present, and in his absence the Vice-President shall preside when present, and if both are absent the Directors who are present may appoint a Chairman for such meeting.

The meetings of the Officers shall be held pursuant to adjournment, or be called by written notice given by authority of the President, or, in his absence, of the senior Vice-President, at least one week before the day appointed, and at any such meeting five shall be a quorum.

The Annual Meeting of the Association shall be held not later than the First day of March in each year, at such time and place as the Directors may decide, but the time and place of holding such annual meeting shall not be decided unless the notice calling the Board meeting shall have stated that this question will be considered at the meeting called by such notice. Fourteen days notice shall be given to each member of the Association of the holding of such meeting by written notice, addressed to his usual post office address, or to the post office address standing on the books of the Association, and by advertisement in such paper and for so many insertions as the Board of Directors may decide.

The Treasurer shall furnish security to the amount of one thousand dollars, in one or two bondsmen, for the faithful performance of his duties, to be approved of by the Board of Directors. The Board of Directors may fix the salary to be paid the Treasurer and the Secretary, or Secretary-Treasurer.

An Executive Committee, consisting of not less than four members of the Board of Directors, shall be elected annually by the Board, and such Executive Committee shall, from among themselves, appoint a Chairman. Any officers of the Association may be included in the four so to be elected. The Executive Committee shall discharge and perform such duties, and be clothed with such authority as may, by resolution of the Board of Directors, be relegated to them.

These by-laws may be amended, altered or rescinded, at any annual meeting, by a vote of not less than two-thirds of those present.

II.—DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO.

OFFICERS FOR 1888.

President, - - - J. K. McCargar, Belleville.

1st Vice-President, - - D. Vandewater, Chatterton.

2nd Vice-President, - James Bissell, Algonquin.

Secretary, - - - Harford Ashley, Belleville.

Treasurer, - - - P. R. Daly, Foxboro'.

Directors:

Division No. 1.—E. Kidd, North Gower.

Division No. 2.—Wm. Eager, S. Mountain.

Division No. 3.—F. H. McCrea, Brockville.

Division No. 4.—Jas. Haggerty, W. Huntingdon.

Division No. 5.—Platt Hinman, Grafton.

Division No. 6.—Henry Wade, Toronto.

Auditors, - - { J. G. Foster, Moira, Thos. Miller, Spencerville.

LIST OF MEMBERS

OF

THE DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO,

FOR THE YEAR 1888.

Name.	Post Office.	Name.	Post Office.
Ashley, Harford	Belleville.	Chittick, Jno	Selwyn.
Aylesworth, J. B.	Newburg.	Drewry, Geo	Stirling.
Bell, T. E	Peterborough.	Daly, P. R	Foxboro'.
Brown, Jos.	Lakefield.	Deyell, Ernest	Peterborough.
Boardman, Moses	Chatterton.	Derbyshire, D	Brockville.
Bird, Wesley	Shannonville.	Daly, F. J	Peterborough.
Burnie, Matthew	Spencerville.	Eager, Wm	South Mountain.
Boham, John	Stoco.	Eager, Geo	Kars.
Brenton, F. W	Foxboro'.	*Ensign*, Ed	Brighton.
Brintnell, E. P	Belleville.	Farley, Jas. M	Belleville.
Blezard, Thos	Villiers.	Fargy, Peter	W. Huntingdon.
Bonisteel, W. J	Keene.	Foster, G. S	Moira.
Bissell, Howard	Algonquin.	French, Thos	Bancroft.
Bell, Thos. G	Canifton.	Foster, Walter	Moira.
Bissell, Wm	Algonquin.	Fields, N. H	Lynn.
Bissell, Jas.	Algonquin.	Fairfield, D. J	Wallbridge.
Bird, Morden	Stirling.	Fitzgerald, G. W	Lakefield.
Carlow, T. B	Warkworth.	*Glengarrian*, Ed	Alexandria.
Cook, W. S	Belleville.	Hart, Royal H.	Canifton.
Cleal, Geo	Selby.	*Herald*, Ed	Campbellford
Cheesman, Jas	Toronto.		
Conley, Hiram	Stirling		

LIST OF MEMBERS.—*Continued.*

NAME.	POST OFFICE.	NAME.	POST OFFICE.
Huyck, O. W.	Castleton.	Moore, C. D.	Peterborough.
Huyck, W. B.	Morganston.	Nevin, Wm.	Box 315, Montreal.
Hinman, P.	Grafton.	*Packet*, (Ed)	Orillia.
Harrity, Jno.	W. Huntingdon.	Philp, Samuel	Baltimore.
Haggerty, Jas.	W. Huntingdon.	Payne, S. R.	Warsaw.
Hamilton, Jas	Halloway.	Porter, Thos	Peterborough.
Hunt, Martin	Lynn.	Roberts, I. P.	Ithaca, N. Y.
Harrity, A.	Moira.	Robertson, Jno	London.
Homer, J. G.	Garden Hill.	Ruddick, J. A.	Lancaster.
Hoard, W. D.	Ft. Atkinson, Wis.	Roberts, Christopher.	Fenella.
Kidd, E.	North Gower.	Spence, S. S.	South Dummer.
Ketcheson, J. E	Belleville.	Smith, C. F. & Co.	Belleville.
Lowry, Jno.	Frankford.	Stothart, Thos.	Peterborough Dairy.
Latta, Jos	Plainfield.	Simpson, Perry W.	Halloway.
McVagh, Edwin	Ormond.	Spence, Hugh	Norwood.
McIntyre, Jas. E.	Peterborough.	Smith, Alex	Warsaw.
McDonald, C. C.	Wicklow.	Sanderson, M. E.	Selwyn.
McIntosh, Peter	W. Winchester.	Thompson, W. H.	Pittston.
McComb, Jas.	Big Springs.	Third, Jno.	Maynooth.
McPherson, D. M	Lancaster.	Taylor, Warren	Warsaw.
McCargar, J. K	Belleville.	Vandervoort, W. R.	Sidney Crossing.
McCrea, F. H	Brockville.	Vandewater, D.	Chatterton.
McCargar, Byron	Belleville.	Vance, Robt.	Ida.
McWater, Wm	Moscow.	Whipple, Edward	Carp.
McDonald, A. G.	Burnley.	Warrington, J. T.	Belleville.
Moulton, Albert	Farmersville.	Whitton, Jas.	Wellman's Corners.
Murphy, Patrick.	Stoco.	White, Frank	Belleville.
Miller, Thos.	Spencerville.	Wade, Hy.	Toronto.
Morgan, Ira	Metcalfe.	Walker, Thos.	Wellman's Corners.
Miller, Jas.	Spencerville.	Wells, Jno. B	Wicklow.
Moore, Jno.	Lakefield.		

ELEVENTH ANNUAL CONVENTION

OF THE

EASTERN DAIRYMEN'S ASSOCIATION.

The eleventh annual convention of the Dairymen's Association of Eastern Ontario assembled in the old music hall, Peterborough, on Wednesday, 4th January, 1888, at 10.30 a.m., when the President, D. M. MacPherson, Esq., Lancaster, delivered the following address :—

Members of the Eastern Ontario Dairymen's Association :

I am much pleased to meet you here in this pleasant town of Peterborough. It appears to be a progressive town, and I have no doubt that its citizens are progressive men. We are here meeting with you for a common purpose, to further our personal interests, our collective interests as a community of dairymen, and our national interests as citizens of this country. We are here for the purpose of educating ourselves so as to improve our vocation for our work in the future. It is by our acts of to-day, or this year, that our destiny is shaped, because I believe that every act we do has an influence on the future, for good or for bad. Our aim should be, then, meeting together in convention here, to have an influence for good on the future. The measure of success in mostly all lines of business depends upon the knowledge of the operator of that business ; hence, a man's knowledge is the measure of his success. The dairy business is now getting to be one of great importance in that it is beginning to be recognized as the leading business of this country. The past fifteen years has shown a wondrous progress. It is the experience of all dairymen, who have applied skill, that they have been benefited very largely by the results of the dairy business. As we have received a large benefit in the past, I believe there is a great benefit to be received still in the future. I believe there is a great deal to be learned, and much to be applied of what we have learned. The great trouble with farmers, as with practical men generally, is their non-application of the knowledge they have gained, It is not the amount of knowledge that each man receives that does him good ; it is the amount of it that he applies to his every day work from which he can expect either his own individual benefit or that of the community. The dairy business has grown from a very small beginning, some 20 or 25 years ago, to one of large magnitude. I don't think I am overstepping the mark in stating that the value of the export of the cheese product in the past year has been $9,000,000. Now, we may estimate the value of the cheese industry by this large amount, but I hold that there is fully this amount indirectly received in making the land more productive.

Now, this is the experience of the past ; that is what we have achieved. What are we to do in future ? What are the lessons that the past has given us ? What better practices are we to adopt so as to improve still further in future ? These are pertinent questions we should take into consideration at this meeting. How to improve our situation—how to increase the profits of the dairy business—is a serious question. I may say that the dairymen of this country, not only of Canada, but only of the central United States, have actually had a monopoly of the business of the cheese trade in the past. But what do we find ? That the benefits of this monopoly are now being seen by

the leading countries of the world. They begin to see that dairying is more profitable than any other line of trade—the product of the farm particularly—and we find that there are factories starting in Europe, in Asia, in Australia and New Zealand, in the Western States, and in our great North-West. This is a thing that the observant man must calculate on for the future. It means, gentlemen, a larger production in the future, and what does that mean? It means a lower price, and if we have a larger production and lower price, it means that the profit of the producer must be reduced, and that we must be content with receiving a smaller profit or fall out of the ranks. But have we anything to fear under the circumstances? I believe not. I believe the intelligence and practical experience of the past have put us ahead of all our competitors to-day. I believe we have nothing to fear because it has taken us 20 years to raise the standard of our product to what it now is. And it takes time to obtain the practical experience necessary to produce the desired quality, to obtain reputation and secure preference from consumers. But no doubt there will be keen competition with these countries that are now entering into the dairy industry. They mean business, and if we keep pace with improvement, and exercise ourselves to keep ahead of competitors, we are bound to retain our position. And we should also be able to produce at a cheaper rate than we are now producing. I hold we have nothing to fear even with reduced prices, for by the application of skill we may be able, in the near future, to produce at one-half the cost we are now doing. We can distance our competitors in that way. The only encouragement we have in the future is to produce a pound of cheese cheaper than our competitors. We have a market and we can hold it, if we produce the quality it calls for. Now, how to obtain a larger quantity of better quality at a cheaper price, is a pertinent question. I hold that the first condition of success in producing quality is a fertile soil and a good healthy animal,—an animal well adapted for the production of milk—and I think we have a gentleman here who will enlighten you with regard to the special requirements of a dairy cow. Let me press upon you the importance of a healthy animal. Every man of you who has had any experience knows the importance of being in good health to perform a difficult work. If you employ a hired man, and if he is not in good health, can you expect a first-class day's work from him? Why, it is preposterous. The more vigorous he is, the better will be his day's work. It is the same with the stock of our country. The more vigorous they are the better able they will be to convert a larger amount of green food economically into their product. If you have a low standard of health you have a smaller result, but if you have a vigorous constitution in the cow, you have the result in the milk pail. How to obtain the fertile soil is another question which needs our serious consideration. And I hold that herein the secret of the dairy business lies, that it is an indirect means of returning to the soil what was taken from it to make it more productive. We know that the domestic animals, and our farm cattle especially, produce the cheapest fertilizer we can obtain. To save the fertilizing material, it is necessary to have a place to store it, for how can a man save anything if he has not a place to keep it? Some say that an improved barn costs too much. I grant you it costs a deal; but it is not a question of cost; it is a question of business investment. The sickle has given way to the cradle, the cradle to the reaper and binder, and the scythe to the mower. But who would go back to the scythe, the sickle and the cradle because they are cheaper? And because improved barns cost more to make them adaptable, is that any reason why there should not be more money invested in giving means and opportunities for farmers to get the best results from their labours. No farmer can succeed without having all the modern ideas for saving the fertilizer and having healthy animals and economizing labour. To produce quantity you require a rich soil and a healthy animal. Now, what goes to make up the healthy animal? It is the healthy plant, making a healthy food; also, pure air, and pure water; also comfort and non-excitement. These conditions must be carried out by dairymen to obtain perfect health, and you cannot obtain them without studied application. We find very little attention is paid to the ventilation of stables. Impure air poisons the system and reduces vitality, whereas pure air is one of the essentials of success in promoting good health. When you give your animals pure air to breathe, you at the same time accomplish considerably more. How many deaths to the human

family, how many deaths among domestic animals, can be clearly traced to the poisons that, through defective drainage, leak into the well because it was the lowest water level, and was pumped off into the trough, perhaps into the water pail ; to be given to the family and to domestic animals, thereby causing sickness and death? Now, how to obtain the top price is a pertinent question. Get your large quantity, get your good quality, and then, gentlemen, your success is certain. To obtain the top price for products the first essential is co-operation — not only by farmers and the manufacturer, but by the buyers as well. We have in Brockville a number of farmers who have combined and formed a cheese board, and they have also combined to make a good article to sell on that board. They have received this last year higher prices than any other cheese market in Canada, perhaps in America. They combined not to sell a pound of cheese until the market day, and they are receiving the reward for their unity of strength. Now, no single dairyman can obtain a reputation in the markets of the world nor can a single dairyman make a market to attract buyers. This country, gentlemen, is adapted for all purposes of the dairy—for producing good beef, butter and cheese. The farmers in each section should calculate what the section is suited for, and then combine to produce the greatest results. We know it to be a fact in relation to cheese matters that every pound of poor cheese made has an injurious effect on the good article. So it is with the farm stock. Every poor animal a man has deteriorates the value of his choice animals, and every poor lot of cattle in a section deteriorates the value of the good cattle. Hence, it is important that every herd should be raised to the highest standard. We see it in Canada, in Huntingdon, with regard to horses. Some fifteen or twenty years ago a few farmers combined to improve the horses of that district. To-day, gentlemen, they are getting from $500 to $1,000 for their improved horses. Could a few men accomplish these results? Let a horse buyer come into Peterborough. He will first make inquiries where the best horses are kept. He is told there is one man who has got some good horses. "Is there only one man?" he will ask. You reply, "There are only two or three." "Well, I want to go where there are good horses all through the district." And away he will go where he can have a choice. Now, I hold that if the farmers unite to bring the milk product up to 7,000 or 8,000 pounds a-year, they will, in a few years receive for young grade animals the price paid for Holsteins to-day. Hence, I hold that the farmers who co-operate to raise the value of the land, of their stock and their products are doing a wise thing. The buyer is interested to purchase the very best article ; hence, it is important that the farmers should form a union with the manufacturers and buyers. Following out this suggestion, I would say that every dairyman and every factory patron ought to pay into a fund $10 for every hundred thousand pounds of cheese made. The cheesemaker should pay $1, and the buyer $1. With a fund raised in this way, and it would be the fairest way to raise it, you could thereby have an inspector to cover the ground of twenty or twenty-five factories a season. The farmer would have the advantage that he could appeal to the inspector to know if the cheese-maker was honest or not, and to see that his neighbours were sending pure milk to the factories. The inspector would also know how the factory was conducted, and he might settle any disputes in the factory. Then there is the cheesemaker. He has his every-day work in the factory to attend to. He has no means of knowing what others are doing. But the inspector can tell who is making a better cheese, and how it is made, and the cheesemaker can adopt that system and improve his make. The buyer also is interested in receiving the very best article, because the finer the article he buys the better he is able to receive a profit from the handling of it. It is a known fact that there is very little risk in buying a superior article. The great risk of buyers is in purchasing a medium cheese, and there is more money lost on the poor article than on the good. If he thought a factory was turning out poor cheese he could have the inspector sent there to instruct the maker how to produce a better article. Without the co-operation of the dairyman, the cheesemaker and the cheese-buyer in this way, we cannot hope for improvement. It is only by knowing how to improve that we can lead the trade in the future.

Mr. DERBYSHIRE.—Mr. President and gentlemen: I can assure you it affords me very great pleasure to congratulate you on the able address you have just delivered. It is an address that is practical,—that is exactly to the point. Now, sir, the co-operation spoken of is something very desirable. A better quality is something we must have if we expect to hold the position we have to-day. You know we are living in a time of progress. That is the watchword of to-day. The men who expect to hold any position in this country have got to be progressive men, men who are prepared to take hold of this business and keep right up with the times in which they live. Now, we have even in Brockville section an odd factory, to our disgrace, where the gentle breezes of heaven can just blow through them as easily as possible. You can see the earth below and the heavens above. The temperature outside is the same as it is inside. No matter if it is 90 degrees in the shade, that is exactly how it stands inside, and the cheese is melting and dropping the very essence of itself on the floor, or rather on the mother earth. On a cold day the cheese maker is working with his overcoat on. He would have his mittens on only he could not handle them very well. I know this for a fact. I saw it in a factory where I had contracted for 12½ cents a pound. I saw an old box stove and the cheese sitting by it were gently dripping to the floor while those a little behind were freezing. And you could look down upon the ground—that should be protected—and you could look right up and see the beautiful heavens above. Now, I rejected the cheese from that factory. Would you not have done that too? Yet that man is prepared to swear I did him a terrible wrong. I have no sympathy for these men. If a man in this 19th century with the great advantages we are enjoying of all the lessons taught to this people is bound to continue to manufacture cheese the same as this man was doing, and in such a building, and calculate that he is going to run business in that kind of style, and sell his goods at the highest prices, he is making a great mistake. He is a detriment to the country he lives in, to the whole business. A man who makes a poor article is a source of drawback to the whole section. If the miserable creature only injured himself we would let him alone, but his cheese has to be removed from that particular locality, and it injures the reputation of the whole locality. If you have two poor cows in ten it injures the reputation of the cows in that particular locality. Now, sir, with regard to the buyer, I believe in Eastern Ontario we have a magnificent lot of buyers. (Hear, hear). Men who are prepared to do exactly as they agree. And I assure you it is in the interests of the people they are so. Now, we have in our section a few such people as I told you who are determined to make milk for less than they can afford. They are determined to make a poor quality and be in the road of people who want to make a good quality. Now all others in the neighbourhood who have a pride in their factory are injured by this. What encouragement is it for a man to go ahead if he finds that the patrons are running one year to one place and next year to another, willing to go anywhere if they will get one-tenth of a cent off the maker. We must unite, as our President said, and come to the point that we have got to stand together in our factories. We have got to put every effort forward and help our neighbours to do the same in order to get the best results. Now, you could have Saint Paul preach here, and if you didn't attend the services they would not do you much good. And the cheesemaker cannot have the best results unless he listens and learns. How can you produce a better article for less money? A great many farmers think it very cunning to have two milk waggons running on one route. I tell you it is a curse to the country. (Hear, hear). We want to work together for the production of a large quantity of fine goods, and for less money than we have. I have not the least hesitation in saying that we will have to produce cheese for less than eleven cents in the near future—next year. Because the English people are jealous on this point. I just want to give you a little history of this year. What was the result up to the time of our contract, May, June, and July? There was a terrible competition. Most of the members of our board are here. They will know the competition there was for every solitary box of cheese up to the time the contracts were made. The very moment that the contractor started 12½ cents was paid in Brockville, and now no contract orders ever come from Liverpool to the Brockville section. They withdrew their orders. They say, "Here, these people are a speculative people," and

they have withdrawn their orders, and the result was that this thing went on, and the contract was continued and resulted fatally, I believe, to Brockville section, although the people received more money than they would have if they had continued on the board of trade. But I believe it was a detriment to the country. We want to unite in getting a large quantity of milk in any centre, of the finest quality. After we get our factories formed, we want to form ourselves into boards of trade, and make the finest cheese, and sell it at one point, and let them sell regularly, and let the people of the world know we are regular suppliers of the trade, and not speculators; for there is nothing will bring us the market of the world so quick as the fact that we are not speculators. You go to a merchant, and ask him the price of cotton. He says, "To-day it is worth seven cents a yard, but I will not sell any to-day for what it is worth to-day, because it will be worth more next week." Would you not go to the man who would sell you the cotton for what it is then worth? This is exactly how we have lost. That is how the butter trade has been taken out of our hands entirely. I remember the time when Brockville section was the greatest market, as orders came from Liverpool, Glasgow, and other points. But the moment the people put their butter in their cellars to rot, and said we won't sell until we get a higher price, their whole trade was destroyed. This is a thing you want to take into consideration. Then every man who is furnishing milk wants to know where he belongs to. He wants to assist in erecting a first-class building, to get first-class machinery, to get the best maker in the country, and get as large a quantity of milk as possible to get the best results. The President threw out a very good idea this morning. Take this board of Peterborough, and get an instructor for it. Let every patron interested in producing a fine article, let every factory grant $25 to pay for this instructor, and let him build up 25 factories here of the finest quality. Then we will get at the bottom of this business. I think $20 or $25 a small matter for a factory to give. I know factories that have paid $400 and $500 for poor cheese in 1887. But you take it on the average, there is probably not a factory that has not lost $75 to $100 on account of poor quality. I can see the progress that has been made in St. Lawrence county, just opposite Brockville. You would be perfectly surprised to see the difference in the quality they are making to-day and what they did two years ago. I have letters every week saying, "We don't care about the wages, but send us the best Canadian maker." They want Canadian makers. (Hear, hear). And I tell you this improving spirit is going to progress from year to year, and unless you calculate to tear down these old shanties you are making cheese in—I call them barns—you had better get out of the businsss, and the quicker the better. (Hear, hear). It is a mistake building these little factories instead of large and profitable ones. Some, I know, who have not got over seven or eight cents, say the business is no good, while others get nine cents. The business we have to do, is to weed out these poor men and get others in their places. I would like to impress upon this meeting this particular point I have brought out. (Applause).

Mr. Ford.—I agree with the most that Mr. Derbyshire has said, but when he pretends to say that there have been no orders from Liverpool for Brockville section he is making a false impression. He is aware that the cheese is contracted for, and so there could be no orders. Again he goes on to say if people would sell cheese at its market price, which, I believe, is the correct way, there would be plenty of orders for cheese. I daresay Mr. Derbyshire was one of the first men who travelled out in the country to try and contract cheese. Now, why didn't he tell us that? I say we are prepared to sell our cheese for the best price we can get, but when we find men like Mr. Derbyshire, who try to get our cheese at contract prices, he is the very man who is opposed to us.

Mr. Fields.—I would like to say in reply to Mr. Ford that he makes a mistake as far as Mr. Derbysbire is concerned. I guarantee he would not contract if he could help it. I would just say in reply that we have in the town of Brockville two buyers who receive their orders direct from Liverpool, and half the time there was cheese left in this section which could have been bought had there been orders; but when they could not get orders from Liverpool they started off to buy cheese on contract if they could get it—but Mr. Derbyshire was not one of them.

The PRESIDENT.—We should not get away from the question like this. We will take up subjects in this way, not from a personal point of view, and deal with the matter in a general way.

Mr. WARRINGTON.—I'll try to say a few words. I will have to go a little against the President first. He recommends boards of trades. That is all right, but I don't see how he recommends them so much when he does not support them.

The PRESIDENT.—I have one of my own.

Mr. WARRINGTON.—Yes, has sixty-six factories, and with few exceptions he has never put a cheese on any board of trade since this board started. However, that is neither here nor there. We have heard a great deal about factories, and Mr. Derbyshire has told you about bad curing rooms and bad making rooms. He says seven or eight cents a pound was what farmers were receiving in Brockville section, and he stands up for the quality of the cheese. We have made over ten in Belleville, and we are pleased to own it. We don't give way to either Brockville or Peterborough. Mr. McPherson, our president something like three years ago, said he could make as fine cheese in October as there were made in September. Well, I doubted it, but this year he made 21,000 cheese, and I tell you frankly and fearlessly that his October cheese was better than his September make. I have seen his cheese made in September, and the October make was better. The only thing was in having a warm making room and a warm curing room. (Hear, hear.) Land is cheap and timber is cheap, yet you go into a little factory where the cheese is sitting in three tiers, while another $50 would put them all on one tier. That is one of the main things I have got to grumble about in Belleville. Some cheese makers in this section think themselves perfectly competent to take hold of a first-class position, while they can't do it. I refer to young men who put in a year at cheese making and then think they are fit to take any position. They can't learn to make cheese in a year. I believe the board is free to every man so far as contracting or the price of contracts are concerned. Most people contract if they think they can get a fair price. Sometimes they are wrong, sometimes right. Mr. Derbyshire speaks about selling week after week, and perhaps he is right, but the millenium is not here. (Laughter.) This board of trade never refused to sell at any meeting held in this room, and never refused to sell any week since it was opened. (Hear, hear.) Lindsay board and Peterborough board are cleared off every fortnight; they come here to sell and sell they do. And I must say I have had a great many transactions with Peterborough, in fact, I do a very large part of my business here, and I am pleased with everything I get here, the quality and everything. We have got our cheese board, we have an instructor, and we make the finest goods. (Applause.)

Mr. HAGGERTY.—Mr. President, in your address I think you said we would have to make a large quantity and better quality. I find it takes about ten pounds of milk to the pound of cheese. How then can you make more cheese with a less quantity of milk.

The PRESIDENT.—The idea is to produce a better flow from the cow. But let me here state with regard to making quality out of a given quantity, that should be the great improvement. First quality out of a given quantity of milk, and then quantity. You can have your cheese too firm, too dry, too unwieldy, and of course it is detrimental to the goods; but there is a certain happy medium that will give you the best results. I am very much pleased, gentlemen, to see so many here to day at our first session. I believe we have more at our first session and have been more prompt to meet than any meeting we have held since I have been president of the Association.

Mr. HAGGERTY.—What is the result of your sixty factories or more with regard to the quantity of cheese obtained from a given quantity?

The PRESIDENT.—From ten pounds to ten and three-quarter pounds. We have had a lower average, that is we have used more milk this year than before. But every factory is different. I find this year the higher the land the more milk it took to make a pound of cheese.

Mr. WARRINGTON.—Do you think you could make a choice cheese on much under ten pounds.

The PRESIDENT.—No. It depends on the class of milk.

Mr. WARRINGTON.—With everything in your favour, could you make it.

The PRESIDENT.—I don't believe it is possible to make a pound of cheese out of ten pounds of milk on the average.

Mr. HOARD (Wisconsin).—Mr. President, there is a point in your address, it seems to me, upon which everything hinges, and I don't think we have yet got down to bedrock in the discussion of it, that one pivotal point—and that is the man that makes the milk. I want to see something done with that man. I know there is a large proportion of them that we have no hope for, or the community has no hope for, except in the shape of a funeral. (Laughter). But they are not here to-day, gentlemen. They are nowhere except at the tail of the procession everywhere. They never come to the front, they don't read, they don't attend conventions, and nothing but a charge of dynamite will ever convince them they are moveable. (Laughter.) Now, I want to get at that man some way. I have been pounding away in Wisconsin and the west for a number of years, but as Gray says about "the cold, dull ear of death," it seems as if I was pouring all I possessed into that ear. Now, I have a suggestion to make on this one question, after all that our worthy president has said concerning the increase of the quantity and the increase of the quality, and the general tone of sentiment whereby you have seive-like factories—for remember the factory is known by the tone of the sentiment around about it. It is impossible for the best bred Yankee on earth to go into Arkansas without learning to say "thar." Thus association with other men has a power upon the minds of men. I have a few suggestions to make. This convention won't reach them ; the western convention won't reach them ; but every cheese factory is a dairy centre, and every cheese factory inspector should consider it his bounden duty to do something for the uplifting of the intelligence and judgment of the men who make the milk. And why cannot you have cheese factory conventions every winter ?

A MEMBER.—It's too cold. (Laughter.)

Mr. HOARD.—I guess you struck it. But I know that I was called, two or three years ago, to umpire between quarrelling cheese factory men and patrons. Ignorance lay at the bottom of the difficulty, and these men had no more idea of what was really expected of them as producers of milk than a Hottentot has. Something must be done with them, and I said to the cheese factory proprietor, "Let's get at this in an intelligent way, let us have some meetings and call these patrons together and hold a series of meetings, and next winter I'll come down here and bring down some of our best factory men, and see if we cannot get these people into the current ; they are standing on the bank, and gazing over the current that goes by, instead of jumping in." That is the state they were in. Now, gentlemen, that is one of the finest establishments there is in the State of Wisconsin ; and they have one of the best factories, and one of the brightest and best bodies of producers of milk that can be seen to-day. Now, it needed only that little combination on the part of these patrons. I went among them and said, here you are handling your cheese and going to this expense or that with cows only producing a few hundred pounds of milk. Now secure a better herd and learn what dairy caring, and dairy feeding, and dairy housing is. I say there is no more prosperous community, comprising, I think, some forty patrons, than that little community is to-day, and it all came out of a little plain, simple, practical effort on the part of the cheese factories and dairymen.

Prof. BARNARD.—I may state that a few years ago we hadn't a single cheese factory among the French. Now we have 700, and it is the result of the efforts as mentioned by the last speaker. The government sent lecturers through the country and showed that cows could give a larger product if dairying was established on good principles. This was in '69—not a single factory then, and now we have 700, and it has been the result not of inspecting in districts but in every locality where there was a factory. We have proved that it is the best theory.

Mr. WARRINGTON.—I want to corroborate what Prof. Barnard has just said. Now they are turning out cheese that will compare favorably with the western provinces.

Mr. MCCARGAR.—I am very sorry I came in late, and didn't hear the President's address, but I heard some of it and it was very practical; also, Mr. Derbyshire's remarks. I think their hints will do much good in this country if carried out. I think one of the evils we have to contend against is the factory men getting their work done too cheaply. One has spoken about this thing of young cheese makers who work a few months and then when it comes around to the fall try probably to undermine the old cheese maker and get his place. I know cases where this has been done. If cheese makers got better pay it would be better. Every person connected with the cheese factory, or the company in particular, should try to give his cheese maker enough to live on in winter and attend conventions where they could gather information. I blame presidents more than I do cheese makers. I blame them for hiring by lowest tender. The president ought to consult the directors; he should get this information and convey it to the directors, and then they should hold meetings and educate their own companies, and until we do that we will never have success. I own quite a number of factories myself, and I know that there are other factories that make for less, but when it comes to the fall of the year my factories beat them all hollow every time. But they don't look at that. They say another man will make it a quarter of a cent cheaper and I will go there. They never think about the dividend. I am proud to say, sir, we have a very good instructor, and it has been a great improvement since we had him. I think that Belleville stands among the best sections for quality of cheese, and I think a great deal of credit is due to Professor Whitton. No one, I think, has a better chance to know him than I have, for I own a number of factories, and I know Professor Whitton has done much to help me. I think one great point is the testing of milk. (Hear, hear.) Now, I went to a great deal of trouble to test the milk, and I found on the list some patrons whose milk I would not receive unless they sent it right. I went to a great deal of trouble, and I had a professor with me day after day testing milk, and I have suffered some by it. Though I have lost some patrons by it, yet it is a good thing I did loose them. But I think it should be made universal. We ought to appoint a man to come around and test all the milk, and it they won't send their milk right, make them. There is more bad cheese made in Canada by patrons sending bad milk than from any other cause, and I think we should appoint a man, here in this meeting, to come around and test this milk, and every company should pass a resolution that this man's test should be final and should stand for all.

Mr. HAGGERTY.—I agree with Mr. McCargar that we ought to have some one to test the milk, but after all we want legislation to settle this matter.

A MEMBER.—We have it.

Mr. HAGGERTY.—True, we have it, but if a man's testing comes before the magistrate will it stand? I think we should appeal to our Ontario Government asking them to appoint one, and let it be final; if we appoint one it is a question whether the law of our land will recognize him as a competent man.

Mr. MCCARGAR.—I think any incorporate body can pass a law to appoint one of the company, and that is all they really want. The Ontario Government, I have no doubt, will do all that is right in the matter if they are interested, but they may not understand the men who are competent to do this, and I think each section is better capable to pick out its man than the Ontario government.

Prof. ROBERTSON.—I think we all recognize the fact that we need instruction, and need to have instruction carried right to makers, because a dairyman sometimes shuns instruction. I think we should try to make a knowledge of the best methods inevitable to every man by carrying the best knowledge of the different methods into his neighbourhood. We could have dairy schools, specially organized for cheese makers, for the best methods of cheese making to be discussed at length. Time is not lost at these convention for this purpose. We could have discussed the matter of the testing of milk so that not only would we have efficient instruction, but you could have your cheese makers taught the

best way of testing milk. A great many makers are ignorant of this. Speaking on behalf of the Guelph College, I may say that they are quite willing to have these schools organized and conducted free of expense to the cheese makers. I suggest that this convention appoint a committee to consider the best places and best time, and the outline of work best to be undertaken. I may say further that my idea is like this: That one whole day might be set apart for instruction in the testing of different qualities of milk, with a practical demonstration of the uses of all our instruments and the defects recognized in milk, and the cheese makers could go back and inform their patrons. A day might be given to the consideration of the making rooms. We have not time here to discuss this fully, and there being a great many who are not interested the discussion would become dry. Then as to curing rooms, plans could be given for the economical construction of the rooms. In that way we would be able to disseminate knowledge so that the whole country should be benefited by it. More than that, we would need to have the cheese maker continually helped during the season. A cheese maker hardly knows how to place knowledge gained at these meetings, and after all there is something needed more than the impartation of knowledge. Education means not only knowing a lot of things, but it means knowing the way to apply it. We need instructors to go around during the summer and instruct makers in applying the knowledge they have got at these meetings. We could not have the high reputation we have to-day but for the work of these instructors. But we should give these men a better opportunity of doing their work and supplement them by others. If this convention would appoint a committee to devise ways and means for appointing more instructors, it would be a step in the right direction. It is difficult for instructors to visit a factory more than twice a year. I find the instruction of a cheese maker, by a competent instructor, is more necessary during October than during August; for I am convinced that as fine cheese can be made in October as during any time of the year, and I am glad some men are able to do it. We can do that by having competent instructors doing their labours during the season. Then we need financial help. We should not look too much to the government for that. So if this convention would be pleased to appoint committees to look into this matter they would find hearty co-operation on the part of the Agricultural Department of the Ontario Government, and the Dairy Department of the Guelph Agricultural College. We can carry this instruction through dairy literature; we have been doing so in the past, and I don't know of a spicier sheet for this purpose than the journal my friend Mr. Hoard is connected with. Then we mean to issue bulletins from the Department, once a month, giving what cheese makers need most attend to during the coming month, and also to farmers, and in this way we may be able to reach these men who don't come here. (Applause.)

The PRESIDENT.—Now, gentlemen, we have had a very general discussion. We will try to systematize our work for the future.

Mr. FOSTER.—We have heard something about an inspector being a competent man, but I think always since he has been in the business he has switched off in the last month or two as a buyer instead of instructor. I think it is a mistake, and as far as I can learn his October cheese was not as good as it should have been, but we will let that go for what it is worth. We have no reason to find fault, I am sure; he has done us good and is deserving of great praise. The great point appears to be that touched by our American friend here, about carrying the information we receive here to patrons. The cheese makers, very wisely I think, organized what was called a cheese makers convention in our county last year, which was productive of a great deal of good. They met and discussed, and proposed to meet once or twice during summer, but when cheese making is commenced there is no time to do that, they have to attend to their business; but I would suggest that this cheese makers' convention be re-organized if necessary, and that they have at least a couple of meetings somewhere in each section of the county through the winter season. I fully agree with what our American friend said, and I believe that is the grand point we want to aim at. We speak of hiring cheese makers too cheaply, which is done, but I don't think the presidents are at all to blame; they carry out the wishes of their patrons. The people who stay at home, who are not here, whom we want to reach and educate, are the ones to blame. If the reports of these conventions,

or parts of them containing the practical truths from farmers as to the method of handling milk, and so on, were put into a form we could give every patron of the cheese factory, it would be to their interest.

Mr. McCargar.—Instructors have to live and provide for families, but it is my certain knowledge that no cheese instructor I know could possibly live on the pay he gets now and work the whole season. If Mr. Foster wishes them to continue instructing through the whole season on their present salaries they had better make the cheese themselves. They can't live.

Prof. Robertson.—I am glad to hear that an appointment I made a great many years ago, Professor Whitton here, has given such general satisfaction ; it reflects great credit upon my choice, I assure you. And now I might just say that we have an instructor in Brockville section that has given universal satisfaction, a man of very fine ability, our friend Mr. Fields ; it gives me great pleasure to name him as a man who has done much good.

Mr. Hinman.—What about this committee to see the Government about more money for dairy purposes ?

Mr. Foster.—I don't think that they meant applying to the Government for money to pay instructors.

Mr. Haggerty.—The instructors, when appointed, were told to ask each cheese maker to give them three dollars for their services. That money they were to keep. I ask Mr. McCargar if this was given.

Mr. McCargar.—Professor Whitton's salary has not been over $350 from this source.

Mr. Bissell.—I can say they used me well. My friend Mr. McCrea gave me $15, and I will guarantee that I took in $500 or $600 from cheese inspecting. I was told that if I would get up a milk test they would give me a dollar each. When I first started out I was very timid and let people off too easily, but the last two years I have found out something, I have found out that from six to eight factories have been getting adulterated milk.

The President called the meeting to order, and the following committee on order of business was appointed :—P. Hinman, F. H. McCrea, and Jas. Haggerty.

The convention then adjourned till afternoon.

WEDNESDAY AFTERNOON SESSION.

The afternoon session opened at 2.30 o'clock, the President in the chair.

The President announced that he had appointed Messrs. D. Vandewater, P. Hinman, and F. H. McCrea as the nominating committee, and Messrs. D. Derbyshire, Wm. Eager, and Jas. Haggerty as the finance committee. He asked if there were any objections to the appointment, and on there being none confirmed the appointment.

THE PRODUCTION OF MILK.

The President.—I have now much pleasure in introducing to you Prof. Roberts, of Cornell University, who will read a paper to you on the "Production of Milk." I hope you will give him a good, fair hearing, and then criticise him as closely as you can. I hope each and every member will comment on the paper after it is read. I am sure you will be delighted and instructed by what Prof. Roberts has to say to you.

Prof. ROBERTS.—Mr. President and gentlemen of the convention: I come before you again with a great deal of pleasure. I notice when I land on this side of the lake, what seems to animate you one and all—a thirst for knowledge. How shall we get knowledge? and how shall we spread it? and how shall we lift ourselves up above ordinary things—above the dominion of brute force, to a higher plane of living and a higher appreciation of our surroundings? So the doctrine I preach on the south side of the lake will do to preach on the north side. Our ancestors were brothers, (hear, hear) and we are brothers, (applause) and so as brothers we may acknowledge our own faults one to another. I want you first to consider some American statistics which I have before me. I blush with shame to say that five of the great States of the American Union, engaged in wheat raising, averaged only eight or nine dollars per acre. Five great States of the Union—Pennsylvania, Wisconsin, Iowa, Minnesota. and Kansas, four at least of the rich prairie States. Is it not time we commenced to preach the gospel of getting more knowledge, of getting at it in earnest? Is it not time we began to preach getting knowledge into every farm house, and taught in every school house—agricultural knowledge. (Hear, hear.) I present my paper in the hope that it will bring out some information and a general discussion:

In order to produce milk of the best quality the dairy farm must be fertile and productive in plant growth. We might as well try to raise an apple of the highest flavour from a starved, lousy tree, or good beef by feeding rotten straw, as to try to produce the highest quality of milk from animals fed on foods which have been produced by the semi-starvation process. We speak of rich pastures. What are they but grasses grown on lands which contain an abundance of all the elements which they require. Somehow we have the notion that rough, poor pasture lands, that will simply produce a little something green, are well adapted to dairy purposes. Here and there we find a pasture that has never had filched from it, by those twin robbers the plow and the reaper, its native fertility, and how the owners prize them.

Let me cite an actual transaction that occured in western New York this year. A farmer sold 33,249 lbs. of wheat for $464.30, and received in payment from the miller 30.95 tons of bran at $15 per ton. The amount and value of the manurial elements in the bran, computed at commercial values according to the latest analyses, were as follows:

Nitrogen	1,385.656	lbs.	at	17c.	per lb	$235 71
Potash	885.17	"	"	4c.	"	35 40
Phosphoric Acid	1,689.87	"	"	7c.	"	118 29
Total						$389 40

This bran was fed to milch cows, and allowing that 20 per cent. was taken off in the milk we have $311.52 worth of plant food left in the manure, difference $153. If he had fed the wheat which contained $143 worth of plant food, and then deducted 20 per cent. as before, there would have been left in the manure $114.40 worth of nitrogen, potash, and phosphoric acid. In other words, he added $197.12 worth of fertility to his farm by trading his wheat for bran and feeding it. It may or it may not be profitable to raise wheat at 80 cents per bushel, but there can hardly be a loss in feeding bran at $15 per ton. Good lands will easily grow good plants, and it is bad economy to feed them to poorly constructed animals.

We hear much of the general purpose cow. The name is a misnomer. No intelligent man is trying to breed such a cow, and certainly nobody wants her in the dairy. On the other hand, few people want a cow with rump and loin placed at an angle of 45 degrees, a tucked up consumptive chest, a papery skin, long horns and large bones. What we want is a business cow, and we want her so educated that she will attend to business and not go off on a strike three or four months in the year. A business cow is not a monstrosity or one that attracts attention by her elephantine proportion, or by her sheep-like diminutiveness. The leading points of the business cow differ less from the beef animal than might at first be supposed. In both classes prominent eyes, delicate horns, head and neck, and a fine bone frame are desirable. In the one well developed brisket, crops and shoulder; in the other these points should be so refined and

reduced as to give the desired double wedge shape, and yet not so far reduced as to endanger vigor, vitality and health. In endeavouring to produce exceptional qualities we too frequently loose sight of those qualities without which all others are useless. A straight top line, long horizontal short ribs, a broad pelvis, a fine boned tail, abundant soft, mossy hair, and a moderately thick skin are desirable qualities in the dairy cow as well as in the beef animal. The thick thighs, low twist, and heavy flank of the beef animal are transformed by breeding, selection and habit in a capacious udder, thin thighs, high twist, and light flank of the model dairy cow.

The general characteristics and outlines of the two varieties, while greatly differing in a few essential points, are not so widely different as we sometimes suppose, neither are their offices. They both produce fat from their food, the one deposits it on the back the other in the udder. They both store up nitrogenous matter, the one in lean meat on the loins the other in caseine in the udder.

How is it, then, that these two types, so nearly alike in many respects, should produce such different results with the same food? Simply because of their inherited tendencies, and just here are found the great and vital beginnings of success in the breeding of dairy cattle. Do not let us continue to make the mistake of supposing that because an animal is recorded in some herd book it will transmit valuable inherited qualities. We find many good animals recorded, but quite as many thoroughbred scrubs which have inherited no superior qualities themselves, neither the potency to transmit the valuable ones of their near or remote ancestors. How often have I seen a pair of two-year-old heifers, so nearly alike in colour, form and outward characteristics as to be scarcely distinguishable, brought to the stable? They drop their first calves, and are fed alike and with judgment. In six months the one has ceased to give milk and is good beef, the other has so changed its form as almost to have lost its identity. The shoulders have become shrunken, the meat has gone from the thighs, the flanks have become thin, the whole rear part of the animal has grown in breadth and height, while all the front part has become thinner and the shoulders apparently lower, the flow of milk is still abundant, and the udder has absorbed the surrounding parts, or rather dwarfed them, by using the material which formerly went to sustain them. The difference in results in this case is all due to inheritance.

Then breed cows of good form and fair size, which have inherited strong tendencies to produce milk of the quality desired, with vitality and health sufficient to transmit these qualities.

When we see a spindle-legged, narrow-chested, red-nosed, callow youth expatiating on the great strength, prowess and heroic deeds of his grandfather we pity him. And so I often pity the owner of some thoroughbred scrub as he rattles off its pedigree.

I find, that if I divide our dairy into two equal portions according to quality, the average of the one half will be far superior to that of the other; should I rest content or try to improve the poorer half. If I advance I shall have to kill or sell the poorer ones and raise or purchase others that are better. If one is in earnest at least one-fourth of the dairy will have to go each year. If one continually improves, then the best will soon become only relatively good and the good relatively poor. So the highest success is attained by constant change; hence beef, to a limited extent, in this connection is as legitimate and ultimately as profitable a product of the dairy as milk.

Don't cheat your neighbour by selling him a cow that has continually run you in debt. Let the butcher's axe end the life of the unprofitable servant.

Food and labour are both so high that if we place our animals under the most comfortable conditions we shall receive the greatest net profit. Notwithstanding this, false economy, carelessness or ignorance, or all combined, will cause, during this cold, long winter, not only cruel suffering but great loss.

The old barbarbous practices are still too prevalent in ten thousand dairies in one form or another. Some cows will roam the fields or yards half of the day to get the supposed needed exercise; some will be turned out to go long distances to get a sup of water, while standing on the slippery, manure-covered bank of some icy stream; others, with filthy hams and feet covered with frozen manure, will suffer on in their dark and reeking dungeons. Not one of these forms of dicomfort but entails great loss to the owner of the

dairy. When we add to these discomforts the one of semi-starvation the conditions become truly pitiable.

It is not pleasant to speak of these barbarous practices before this intelligent audience, most of whom I have no doubt would as soon see their children abused and starved as their cows. This protest that I make against barbarity is not addressed to the righteous, but to the sinner.

Having provided comfortable quarters and an abundance of food for both winter and summer, let the dairy be run fifty-two weeks in the year. Most of the butter and cheese dairies are virtually closed five months in the year. If we inquire for the reason, we are told that it does not pay to dairy in winter. Is that so? Let us see. I took the pains to weigh the food consumed and the milk produced during the last three days of November in the University Dairy, composed of twenty-one cows. The average of the three days gave the following results of food consumed in one day:

Food.	Cost per ton.	Value.
Corn stalks, 141 lbs	$ 5 00	35c.
Hay, 171 lbs	10 00	85c.
Roots, 200 lbs	3 00	30c.
Bran, 61 lbs	15 00	46c.
Oil Meal, 121 lbs	25 00	15c.
Bean Meal, 12 lbs	10 00	6c.
Cotton Seed Meal, 40 lbs	22 50	45c.
Corn Meal, 50 lbs	24 00	60c.
Total		$3 22

The average yield of milk per day was 435 lbs., and 18.2 lbs. made one pound of butter. The food required to produce a pound of milk costs .0074c., or .0152 per quart; or 74c. per hundred pounds, or $1.52 per hundred quarts.

The nitrogen, potash and phosphoric acid contained in a day's ration for the twenty-one cows, computed at commercial values 17c., 4c., and 7c. respectively, was $2.06. If if we take 20 per cent. from this as the value of the elements named above contained in the milk, and hence not appearing in the manure heap, we have the value of the manure, $1.65 for one day. The food of each cow per day cost $.153, and she produced 20.7 lbs. of milk worth $.015 per lb., or $.31 per day. Adding the value of the manure, $.0785, gives a total daily product per cow of $.3885. This less the cost of the food, $.153, leaves $.2355 per cow and day for labour and use of plant, or $4.95 per day for the entire dairy. Not a very large showing, but far better than we should have if the dairy had to be fed for half of the year with no income from it whatever, except the manure. In fairness it should be stated that a majority of these cows had been milked during the summer, and hence the showing is not so good as it would have been if the average time from calving had not been so long.

One half of the cows in our country are now on a strike, and like all strikers the longer they continue out the poorer they get. Thousands of farmers will spend much of their time for the next three months as dry nurses to these lazy brutes, and patiently wait without a protest until spring, or until the cows get ready to feebly report for business. What can I say more to arouse the laggards to a realizing sense of the suffering and loss from some of the methods now practiced in the dairy.

Before resuming his seat Prof. Roberts gave an illustration of a cattle tie which he used, and said: I have given a great deal of thought to devising a comfortable tie. I try one thing and one of my men gets his fingers pinched in it. He says it's no good. All right, I say, tear it out. Then I try something else, and I ask the opinion of my men on it. They tell me it's not working very well. All right, I tell them, jerk her out. And at last, by experimenting extensively, I think I have got a tie in which the cow is as comfortable as she is in the pasture.

A Voice.—How about giving the cows warmed water.

Prof. ROBERTS.—It's a good thing. It only costs us ten cents a day for warming the water for all of our stock, and we find it a great benefit to them, and here let me say that if any of you have a dog to drive your cows, you had better sell it as quick as you can. (Laughter). I had a small cow once—a timid, nervous little creature. To see what effect scaring would have upon her, I told the boys to take her out and set the dog on her. They did it. They scared her till she scared them. Result, that cow's milk was not half what it was in the morning. This shows the bad effect of frightening your cows. I say the use of the dog in a dairy is a barbarity.

Mr. HOARD.—I can emphasize what brother Roberts has said regarding the injurious effect fright has upon cows, and to do so I'll give you a little experiment of my own. Just let me remark here, that the most easily affected element in the milk is the butter fat, and in a cow of nervous temperament whose equilibrium is easily upset fright has a very injurious effect upon the butter producing quality of the milk as well as the quantity. I had a three-quarter grade Jersey cow. She was a pet of mine. I never hurt her in any way, and I never even spoke unkindly to her. One day I took a pin and drew it across the flank scratching her quickly. She jumped and sprang away into the stable in a moment, and there stood complaining with that low "moun" moaning of cattle for a long time. I was then taking four oil tests of her milk daily, night and morning; had been doing so for several weeks, watching the constant fluctuation of the amount of butter fat in the milk at each little disturbance. I was surprised at the next test, though. There was actually 15 per cent. less butter fat in the milk. Some violent thunder storms took place out there that were unusually severe, and I experimented on four of my cows, and found that they had responded to the disturbance as the mercury responds to heat or cold. Now that we are dealing with this question of nervous equation, it would be well to find out where the "pocket" nerve is. (Laughter). I don't think it will require much effort to find it. (Applause).

Prof. ROBERTS.—I want to call attention to a few popular errors in dairying. Mr. Hoard's remarks have reminded me of them. Sugar in milk seems to be ever constant. The next constant element in milk is caseine. It is not so quickly affected as butter fat, though it varies considerably. More than that, you get a cow that has plenty of butter fat in her milk and there is sure to be plenty of caseine. The idea that if the milk is low in butter fat it is high in other solids is all wrong. A good cheese cow is a good butter cow, and a good butter cow is a good cheese cow. It is an exploded notion that certain breeds of cows are good for cheese and certain others good for butter. Butter fat and other solids go together; am I not right? (turning to Mr. Hoard).

Mr. HOARD.—Entirely right.

A VOICE.—What is the best breed of cows?

Prof. ROBERTS.—This is the war of breeds again. Well, my recommendation is that if the Jersey gets there with less expense, she's the cow. If the Holstein gets there with less expense, why she's the cow. There is no such thing in this country as the "native" cow. We may eliminate that term from our list of names, they are simply a mixture of other breeds. But you dairymen of Canada should first find out what you want. Down near New York you can't get a dairyman to keep a Jersey cow, they can't get the Jersey milk from Middletown to New York, because its so rich in butter fat that it spoils.

Mr. CHEESMAN.—How far is it from Middletown to New York?

Prof. ROBERTS.—Three or four hours' ride. The only way these men can cater for the trade is to get the right quality of milk and then keep it cool—down to say 50 or 60 degrees—so that the oil globules will not dissolve. I have known milk to go to Liverpool and back without being sour. It was a little bitter, but it was not sour.

Mr. HOARD.—The question of the size of globules is the secret of why some milk is more suitable for butter than for cheese.. There is a cheese cow. I once had a cow that had a strange sort of history. The milk appeared to be rich, but when I set it for thirty-six hours only a thin film of cream came to the surface. I tested the milk with a microscope and soon found out the secret. The globules were infinitesimally small, and, like

the little bubbles often seen on the sides of a glass of water, did not have the specific quantity to bring them to the top. The larger the bubble the more readily it seeks the top, and so with the oil globules. The milk that holds the oil globule a long time in suspension can be transported great distances. The cheese milk requires to be transported, and if the globules form readily into cream there is great danger of not incorporating it again. It is liable to run off in the whey. Therefore, good cheese milk should be slow in creaming, while good buttermilk should be easy to churn.

A Voice.—Is that not one of the characteristics of the Holstein cow?

Prof. Roberts.—Yes, sir.

Another Voice.—In cases where they deliver to the factory once a day, what is the best way to keep the cream from rising?

Prof. Roberts.—Where the milk is delivered only once a day, the best plan to adopt is to keep the milk cool—50 degrees, or lower—and stir frequently.

The same Voice.—When the cream rises I stir it and strain through a clean cloth.

Prof. Roberts.—You men here now want to make as much money as you can for the least possible outlay, and, while I am up, I may as well give you a few hints as to how you can increase your returns, simply by a little effort. Warm the water for the cows; it costs us only ten cents a day for warming the water for forty head. Cold water checks the digestion and warm water aids it. Then make the feed palatable for the cow; it costs nothing but a little effort to make the food toothsome, and if the cow relishes it you may depend that you will get more milk on the same quantity of food as consumed when she does not relish it.

A Voice.—I would like to ask Prof. Roberts, what kind of cattle he would advise the people of this country to breed?

Prof. Roberts.—If I were going to settle that question for any individual, I should first look to his land. I would not put a Holstein on a side hill, or a Jersey on scruffy pasture land. A railway man would not buy a smut mill to run a railway train. I would first find out the man's wants and then select the kinds of cattle best adapted to suit his purposes. (Laughter.) What do you want to do, that is the question?

The same Voice.—We want an animal which, on good feed and good pasture, will yield us the greatest profit.

Prof. Roberts.—Well, now, you might as well ask me what kind of a woman I ought to marry—(laughter)—Scotch, English, Irish, or Yankee. Now, this is what I want to leave with you—the only thing I can leave you—a few hints as to how to follow your vocation more successfully. Again; what do you want? Do you want to sell beef, or do you want to sell milk to the cheese factory, or do you want to sell milk to the city? Go first to your farm. If you have rough, sparse pasture, put smallish cattle on it. If you have low-lying, rich pasture, heavier cattle will do better. Next thing: how have you been educated? Some men won't have anything but Jerseys; other men you couldn't present them with a Holstein; more men don't want Ayrshire. I'll tell you, find out what kind you're in love with, and if it isn't the best breed, why, then make it the best. (Laughter and applause.)

Mr. Hoard on being called on came forward. He said: I cannot tell you anything more definite than friend Roberts has. I can tell you which cows will give the greatest quantity of milk; and I can tell you where you will get the richest milk. Suppose, for instance, that I was employed in selling milk to a cheese factory, you wouldn't catch me sending any with a single butter globule on it—(laughter and applause)—you laugh before I finished. I was going to say that you wouldn't catch me sending any with a single butter globule on it more than what was on my neighbor's, and until we arrive at a standard of what is "cheese" milk, the question "what are the best cows?" will be asked interminably. We are engaged, in Wisconsin, in trying to find out what the standard should be. We have spent $1,500 on it to determine some method by which the dairymen might be paid according to what their milk was really worth. We haven't

struck it yet, but we're on the road to it. I am buying some milk which, under the oil test, discloses the fact that there is 2.6 per cent. of butter fat in it. Other milk runs up to 6 per cent. A neighbour of mine, Mr. McPherson, has a herd of forty grade Jerseys that average in their milk six pounds of butter fat to the hundred. There is only 2.6 butter fat in the Holstein's milk. These differences in milk, my friends, will be found in every herd, and until we can get a test, as I say, by which the milk can be sold on its merits it is impossible to recommend any special breed.

Mr. BISSELL.—Mr. Hoard says he would not send to the factory any richer milk than his neighbour. The trouble is that every man says his milk is the richest. One man says "I send the richest milk," and another says "I send the richest." I am afraid if we followed that plan the milk would go down in quality.

Mr. MCCARGAR.—Is it necessary that milk should have 3½ per cent. of butter fat to make good cheese? Suppose a milk at the factory shows only 2 per cent., is it possible that it is pure?

Mr. HOARD.—Yes. Some milk goes as low as 1¾ per cent.

Mr. MCCARGAR.—What if it goes lower?

Mr. HOARD.—I should say it was tampered with. (Hear, hear.) The ordinary native cow— what we call the native cow in Canada and the United States—gives 3½ per cent. of butter fat as a usual thing. Of course, it depends on the season, good feed, and so forth. Sometimes it runs up to 4 per cent. and more. This season my boy and I have been taking oil tests. We have taken 12,000 altogether, and they are all recorded. It has been an interesting study for us, and by it we have discovered how men have been tampering with the milk in various ways.

A VOICE.—Suppose you knew for a certainty that you sent better milk to the factory than your neighbors, what would you do?

Mr. HOARD.—In the United States we have a good butter market. You haven't here. In your case the best thing you could do—say if you kept Jerseys—would be to sell them and try a breed that would give you a greater quantity of milk with less butter fat. The Ayrshire does it and the Holstein does it.

Mr. BISSELL.—I have been making cheese for seventeen years, but the richest milk I ever saw was down in the French country. I was making cheese near Quebec city one year. I was much suprised at their way of doing things down there. They draw the milk to the factory with a bull. (Laughter.) They put bits in the bull's mouth and drive him just like we drive a horse. Everything looked strange to me, but the strangest thing was that for the first few days I couldn't make cheese. I went by the same process as I did in Ontario, but I was a complete failure. I soon found out that the milk was a great deal richer than here, and measured out my materials accordingly. That milk was the richest I ever handled.

Prof. Roberts and Mr. Cheesman gave short descriptions of evaporators.

PROFITS IN DAIRYING AND BEEF-RAISING.

Prof. BARNARD, Superintendent of Agriculture, Quebec, read a paper on "The Relative Profits in Dairying and Beef-raising." He said: My subject is on the relative profits of dairying and beef-raising. These are merely a few notes addressed to you from a practical dairyman's standpoint. They may not be very interesting, nor will it be, perhaps, of very great interest for you to know that I have been for thirty-two years a dairyman. In an elaborate article recently published in one of your well accredited agricultural papers, the editor tries to show that when fat stock sells at five cents live weight, and milk obtains eighty cents per 100 pounds at the factories, the profits in either case are very small, if any, and about the same in beef-raising as in milk production. The detailed figures showing the quantity of food consumed, with their market prices,

are given, making the steer or heifer cost the same at two years old, that is $47.70, whilst at three years old the fat steer would have cost the farmer who raises him $93.90, and the three year old heifer, having been less expensively fed, would have cost $78.35. This article is from an important paper in the Province of Ontario—December number. The fat steer is supposed to have gained 1½ to 1¾ pounds per day from birth, and to weigh at three years old from 1,640 to 1,920 pounds. Sold at five cents, the cost of its food, at present market prices would leave a loss of $11.90 in the first case, and a gain of $2.10 in the second. This is merely the cost of feed; no account is taken of cost of attendance. The cow, on the other hand, is supposed to give, during ten years of her cow life, an average of from 5,400 to 6,200 pounds of milk, which at eighty cents per hundred gives a return of from $43 to $50, whilst the food, attendance, risks, stabling, etc., on the cost of cows, the author figures out at $52.70. In this calculation the first cost of a three year old heifer is shown to be $78.35, whilst the same cow at thirteen years old is supposed to have no value at all, as none is given. Elaborate figures are also given as to the respective value of the manure in both cases, the cost of attendance, etc., the result being the loss of $13.18, or a gain of 82 cents. With the fat steer at five cents a pound, live weight, according to its supposed weight of from 1,640 to 1,920 pounds, whilst the cow would show a loss of $2.89 in one case or a gain of $4.11 per annum according to the quantity of milk which she gives for 5,400 to 6,200 respectively. Without endorsing all of these calculations I still see they involve several problems of the highest interest for reflecting dairymen, whose aim it is to derive a fair profit from every one of these numerous and painstaking operations, and who have no interest whatever in following a course in which they are to lose money from year to year. Allow me, then, to call attention only to a very few of these problems amongst the most interesting to dairymen. The first is: should fatting stock and dairy stock be of the same breed, and fed alike from calfhood to maturity? The second is: should not the progressive farmer purchase his dairy stock whenever he can obtain excellent dairy cows at less cost than he can raise them? The cost of a heifer is $79; the cow costs less than $50. Why should a farmer waste three years in raising a heifer when he can often buy a cow for about half the cost of raising the heifer? Then the third question: with proper advantages in the dairy district, is not dairying more profitable than beef-raising? Put in this plain manner, I hope we can arrive at sound and easy conclusions. We are all aware that breeds have been, from time immemorial, bred up to special aptitudes. The present race-horse is the result of constant attention for centuries past with a view of great fleetness coupled with the necessary endurance. The cart horse is, on the other hand, the result of careful breeding in order to obtain the greatest sum of power with the least expenditure of food. Again, we have the various breeds of horses from the Shetland pony to the stately carriage horse—all of them kept distinct as breeds with their special aptitudes, and perfected so as to obtain the best results with the least expenditure of food and care. This same rule has been applied wherever an improvement was aimed at, whether in quality or quantity, of lean meat or of fat; in butchering animals; in strength, length or fineness in wool; in plumage, or meat, in production of poultry, etc. Now, fatting stock and dairy stock are at antipodes, as far as aptitudes are concerned. Where best results are looked for the beef animal should be directed toward beef from birth, and the aim kept in view constantly until it reaches its final resting place—the butcher's block. With that object in view an abundance of rich food will be its every day diet, and as much repose—even perfect quietude should be secured—as is compatible with good digestion. Therefore, in breeding animals not intended for breeding life in its fullness, its activity and power is not to be encouraged, beef and fat being the main, if not the only, consideration. How very different the life of a lively heifer, destined to a long course of maternal usefulness, producing at least ten calves and an average of 6,000 pounds of milk annually, or about 65,000 pounds of milk in its lifetime, say of twelve or thirteen years. Even then, should it not be in fit shape to be served up as excellent soup beef, or even fair meat, where an abundance of good, healthy food has not been wanting? In the calculation the cow at thirteen years of age is counted to be worth nothing. Now, it is a thoroughly demonstrated fact that, other things being equal, an animal consumes food according to its weight, the larger animal, however,

requiring less than the smaller of the same kind; the vital forces necessary to keep up light, heat and motion being proportionately larger in smaller animals than in larger ones. Therefore if the aim of the dairy farmer be milk—and a large flow annually, say from 6,000 to 7,000 pounds, which can be easily obtained with the right breed and the necessary food—why should large animals be kept when small ones can be obtained giving the same quantity and as good quality of milk on much less food? Many small cows, full of life and health, when intelligently fed are known to produce fully 6,500 pounds milk per annum on an average. In our Province even the small Brittany cows give such results, weighing from 750 to 850 pounds; they sell in our markets at from $35 to $40 at most and can be obtained by the hundreds. Other breeds, where well selected, may possibly do as well whilst weighing less than 1,000 pounds live weight. Now, as to the comparative richness of milk: Two cows of 750 pounds each can be abundantly fed on what a fatting steer of, say, 1,800 weight will consume. It has been mentioned several times to-day that some cows give richer milk than others on the same feed. This is accounted for by the fact that some cows turn their feed into activity, others to beef, others still to milk, and others, I don't know where; but it's lost. We have therefore, where good cows of the right breed are kept, from 12,000 to 13,000 pounds of milk annually on the food required to fatten an equally well bred ox. If this fact be admitted—and I think it cannot be disproved—it settles, in my mind at least, the question of the relative profits of dairying as against beef-raising, even should only eighty cents, all told, per hundred pounds be obtained for milk—which you will admit is a very low average—as against five cents a pound for live weight beef, which, it strikes me, is considerably higher than the average paid for the best of beef within the last few years back. In connection with the extract which I have quoted, I might say that it strikes me that some writers and some farmers are so ingrained in beef-raising that they see no profit in dairying. There is just one way to prove which is right and which is wrong—see who makes money and who loses. Now, not to be too long and yet bring out forcibly my first question, I may resume it by affirming strongly that, where the best results are aimed at, fatting stock and dairy stock should be of distinctly different breeds or families, and should be fed differently, and markedly so, from calfhood to maturity. What I have stated above as to the relation of profits of dairying as against beef-raising, where facilities are found for either, leaves in my mind no doubt that dairying is infinitely more profitable than beef-raising, where the best of care and attention are given respectively, and where even eighty cents per 100 pounds for milk is secured as against five cents a pound, live weight, for beef. These two questions being disposed of there remains only the following: Should not the progressive farmer purchase his dairy stock, or most of it at least, whenever he can obtain excellent dairy cows at less cost than he can raise them for? In his opening address your President has very ably and cleverly shown that farmers should work jointly where mutually profitable, thus taking advantage of the special facilities given by nature: distance from market, roads in different parts of Canada, etc. In a rich dairy district, where the highest price can be obtained for either butter or cheese, cattle food is sought after and is worth its fullest market value. The cost of raising animals in such conditions is much greater than in poorer districts where, from distance, bad roads, and little or no dairy markets, dairying is still in its infancy. In the first case a cow should give an annual revenue of from $50 to $60. If the same value for food, stabling and attendance be charged to the growing calf or heifer it will be found that fully as good animals can at all times be secured for much less than they can be raised for, and nothing but money making animals should therefore be kept. By so doing the intelligent and calculating dairy farmer will make more money, have less care and trouble, and besides, give a truly helping hand to the struggling farmer of the poorer districts by bidding for his good heifer cows and thus enhancing their prices. Then would we work for our mutual benefit and act as good intelligent citizens, making not only ourselves but the whole country richer by the result of our every day effort.

Mr. McCrea.—I think that if we adopted the suggestion made by the Professor a to purchasing cows instead of raising them it would be a very dangerous practice. think it would be a bad principle to go by. If we made a practice of going into a section to pick up the best cows for dairy purposes it would leave us poorer cows for breeding, and, sir, I have experienced this very thing myself. Some time ago I followed out that idea, and I found that in the district I bought in the cows were year by year becoming of an inferior class. I think it is a dangerous plan.

Prof. Barnard.—I did not say that the system should be habitually carried on and strictly adhered to. I think I pointed out that there were excellent cows to be picked up, not in one district only, but all over Canada, for less money than it would cost to raise them, and which are equally serviceable in dairying. All over the country, not in one particular locality, there are fine animals which will give on an average 6,000 pounds of milk annually. But I first of all advise breeding the best possible cows. The reason I compared the price of the cows with the three year old heifer is because the figures as to the cost of raising a three year old heifer are carefully given. The writer writes from a beef raising standpoint in a rich part of Ontario, where feed commands its full value. Now, I say that if it costs about $80 to raise a three year old heifer weighing 1,500 pounds, two good dairy cows can be got and maintained for the same money. We have them in our Province—the Britanny cow: though brought out more than three centuries ago under unfavourable circumstances, yet so strong is their vitality that as soon as you commence to feed they respond to it. A friend of mine was of opinion that no good cows were to be had but those having pedigrees. Well, I had purchased some well made cows through the country and had been feeding them up. Bye-and-bye the same gentleman wanted a good cow. I selected one of the poorest cows I had picked up, and pointing her out said that she would give twenty pounds of milk a day. I asked him $40 for the cow. "If you will guarantee that she will give that quantity of milk," he said, "I'll take her." I guaranteed it and he took her. The same animal cost me a little while before $18 or $19. A few days after I sold her she came up one morning to my place. She had not been stabled, and had come across the country two miles to my place to get shelter, and I might here say that if a cow is not well fed and tended she is not worth much. My advice to you is pick up just such cows. I am not speaking for any particular section or province, but from a Canadian standpoint. There is no use in breeding a heifer for three years to find out whether she is worth anything or not, when you can get good dairy cows all over the country at comparatively small cost.

Prof. Robertson.—I think the data upon which this article is founded is not solid. In fact, I think it is wholly erroneous. In the first place you will have to travel far before you can find a man who will sell a heifer giving 6,000 pounds of milk a year even for $79. If he did, he would be very ignorant; as for steers, they can be raised for about $30.

Mr. Bissell.—It strikes me, Prof. Barnard, that the figures given for the price of beef are a little high. It is quite true that first-class beef sometimes brings more than five cents, but the ruling prices will be found to be more like two or three cents. You will find that most of the beef sells at these figures.

FERTILITY.

Mr. Hoard.—I want to bring a little matter before you, Mr. President and gentlemen. It is the question of fertility. Now, too little pains is taken with it. It is an important question. How can you save all the strength of the manure so as to fertilize the land with greater success? I will tell you one way. Every man can get land plaster very easily. Every man loses pretty much all the nitrogen in the manure. Did you ever go out to the stable in the morning, and on turning over the manure, get nearly driven out of it? Well, this is the nitrogen. It is a very volatile gas, and yet

the finest plant food in the world, and nearly in every case this is allowed to escape. I'll give you a little experiment. Last winter I had six Guernsey cattle in my stable besides horses. I said to myself the smell in this place is not good for the health of all of these animals. But I couldn't change them. The question was how could I make it healthy. I knew that land plaster was a powerful absorbent of nitrogen, and so I ordered my man to put in a washbasin full once in a while. He did so, and the stable was almost as sweet smelling as my house afterwards. The nitrogen had all been absorbed. But here is where the profit comes in, In the spring I took out sixteen loads of the manure and had it scattered over seventy rods of ground, and I plant B. and W. corn.

A Voice.—One horse loads or two horse loads?

Mr. Hoard.—Two horse loads, sir. And on that piece of ground I had such corn as you never saw. That summer a drouth came as never smote the west before. The land was all dried up and vegetation could scarcely live. I planted my corn, dragged it when it was four inches high, then re-dragged it and then let it grow. And, sir, do you know that corn never knew that there was such a thing as drouth in existence. (Laughter.) There was plant food enough in the land plaster, charged with nitrogen, to withstand the drouth. There is an old saying that "The dry time tells where the starved land is." (Hear, hear). That one barrel of land plaster gave me the richest seventy rods of ground in the State. (Applause.)

A Voice.—How would lime do?

Mr. Hoard.—Lime sets the nitrogen free. You can save absolutely one half the strength of your manure by scattering land plaster through it.

Prof. Barnard.—Is the manure laid up where it can be washed?

Mr. Hoard.—No; mine was in a hollow.

A Voice.—Do you put the manure on the land in the summer?

Mr. Hoard.—We keep our manure all winter and put it out early in the spring.

The same Voice.—What if you have four feet of snow.

Mr. Hoard.—Well, when any man talks four feet of snow to me, I thank my stars I've got long legs; that's all I can do. (Laughter.)

Mr. Hoard described a model stable he had seen as follows: At the end of the stable there is a two or two and a half inch slat nailed to the floor. This, when the cow is lying down, is just behind her. The manger has a considerable slope outward up, so much that when the animal gets up she is forced to back up a foot or two. The result of this is that the bedding is kept inside of the stall and the excreta goes out beyond the slat. The cow is kept clean and comfortable from the beginning to the end of winter.

The session adjourned to meet in the evening.

WEDNESDAY EVENING SESSION.

The Convention resumed at 7.30 in the Council Chamber.

The President called on Mayor Stevenson, through whose kindness the Council Chamber had been placed at their disposal, to address the meeting.

Mayor Stevenson delivered a brief address welcoming the delegates to Peterborough, and offering to place a couple of pleasure sleighs at their disposal, if they wished to drive about and inspect the town.

The President and Mr. Derbyshire acknowledged the honor in suitable addresses.

The PRESIDENT.—We are now to the question of the evening. I may say of the question before us, ensilage, that it is the coming feed for dairymen for the production of a large quantity at a small cost, and I have no doubt that Mr. Hoard will exhaust the subject and convince you that ensilage, when properly preserved and properly housed, is one of the very best foods for dairy stock that we know of at the present time.

ENSILAGE.

Mr. HOARD.—In presenting this topic I'll try to simplify it, strip it of all verbiage, and give you in a nutshell the latest and best judgment that we have in the west concerning ensilage. We say that the ensilage of to-day, the silo of to-day, the methods of to-day, have been almost entirely revolutionized within two years. The old ensilage was a very costly product, and the silo was very costly too. And a great deal of opposition was shown towards it. A great many men made experiments and became dissatisfied with it and threw it out. As early as 1876 a gentleman named Gilbert and myself built the first silo—he built it and I furnished the drawings. A very rude affair it was. We built it in our own town. During the past summer we have built in Wisconsin 515 silos that we know of. The doctrine of planting a cheap foliage plant, fodder corn, for dairy cattle was inculcated all last winter in the 40 institutes that were held. The result was that about 56,000 acres of fodder corn were planted in Wisconsin more than was planted the year before. As a result it helped us through the drouth. It had to take the place of no less than 200,000 tons of hay. And this alone saved us from a serious sacrifice of our herds. We have rejected the building of stone sides, we are building silos as cheaply as possible and of wood. We have not got the experience sufficient to demonstrate how long they will last, but we are approaching it somewhat, and I will describe to you the silo as it is built at the present time. There are two ways of building a silo, one inside of the barn and the other outside. A great many farmers construct their silos inside the barn, but a larger proportion build them at some point easy of access in feeding cattle. The silo, for convenience sake, should be about the shape of this paper [holding up a piece]—a parallelogram. It should be constructed on a foundation wall about two feet high. On this foundation lay a timber for sills lying flush with the inside of the silo. The bottom of the silo is filled a foot or two with clay to bring it up a little above the natural soakage of the water on the ground outside. On this wall set 2x10, or better, 2x12 studding right around, a foot apart, on the sill. Cut a notch into the stud and set the stud on the sill and the part extending down to the clay. If you have a 16 foot silo you should have 18 foot studding. You have to guard against lateral pressure. Several silos have burst on account of their being too weakly constructed in this matter of lateral pressure. While the silage is sinking it of course expands against the side of the silo. After it has settled there is no further danger. On the inside of the studding, or rather until you have your studding, set up your purlin. It may be a three inch plank or anything. Put on your rafters and your roof—it should be roofed so as to shed water. On the inside lay boards of common sheeting—any coarse lumber will do—horizontally around the studding, shutting it up. Over that put tarred paper, lapping each sheet four inches in this manner. Tack this on firmly. Over that place flooring in the same manner, horizontally around.

The PRESIDENT.—Inch flooring?

Mr. HOARD.—I should prefer inch flooring, tongued and grooved, and if you wish to preserve it as much as possible, cover the whole with pine pitch on the inside. I said the silo should be constructed like a parallelogram, and for this reason. We will say that the silo is 36x12. That will give us, when divided into three pits, three sections of 12 feet square—a very convenient form. Or it may be 30 feet long and 15 wide, but for convenience it is better 36x12. The best divisions I have seen are two inch plank jointed on the edges and dowel-pins set in them in corresponding holes, so that when one plank is set up the dowel-pin enters and prevents it from springing. These divisions are built up as the silo is completed. When you commence to fill the silo you should set up your

platform. A good way is to set it at the centre, and you have to take off the rough boards so that you can drop it in at the top of the silo. Now you set your motor engine ; your power, and your carrier, like a straw carrier, carries your silage up to this centre pit. Fill the other pits in the same way. Now we have learned some things as to the chemical secret connected with this question, and we learned this winter a very important lesson. We are learning all the time, modifying previous ideas and previous practices.

A MEMBER.—What about a door—how about taking it out ?

Mr. HOARD.—You fix your door at the most convenient place for your cattle. Some set it in a corner. No matter where, any place, or inside. I can't tell you, because every man must build his silo according to his convenience. Put into each pit say six feet of silage. We used to rush along and fill them right up, and the result was it heated and went on to fermentation. Now we fill the silo six feet deep, one pit. We set up this plank, and the planks are fastened on the sides in a groove. If it is a 12 foot silo a 12 foot plank. To prevent lateral springing, when you come up midway you can have two hooks fastened into the end of one plank to drop into two eyes fastened beside the silo. These are perfect brakes.

A MEMBER.—Do you tramp down the six feet as you go along ?

Mr. HOARD.—No, sir, we don't tramp it at all. You fill pit No. 1 six feet full, cutting it half an inch to an inch. To-morrow you go to pit No. 2, and fill that six feet full of silage also. The next day you fill pit No. 3 the same way, setting up your plank partitions as you go from one pit to another. When your pit is full the silage presses against the centre plank, and each offsets the other. You go back then on the fourth day to pit No. 1, and you will find it heated up, that is if it is the right kind of corn (thereby hangs a tale, too), to 120° to 140° ; and here lies the way to much of the success in turning out this silage. We are now making what may be termed sweet silage, almost without acidity. If it remains in open air it will pass into a state of fermentation and becomes sour. We are heating this up to 120 and 140 for two reasons. First, to expel the air in this mass of silage as it settles and closes the interstices, and second, to kill the germ that ferments. Now, as we start back the fourth day and put six feet of cold silage on top of this heated silage, that cools it down to about 100, and it gradually cools to 85, where it remains as a rule. It cools it down, chokes it at once, and the heat is transferred to layer No. 2. So on next day with pit No. 2, and the third day with pit No. 3, and back again with successive stages. When you have filled up these pits, as you fill them up you tread the edges around the corn. Some difficulty has been found in corns, and it has been suggested that you set a plank right up against the corn, leaving a little air passage behind, paring the edges before setting the plank in. In my own thinking, it would make a less sharp corner and less friction on the sides, so that it will settle better. You tread this down, levelling the centre, but not treading it more than you can help, and putting in your layers thus until your silo is full. Now to top it. The best method I have seen yet is to place eight inches of silage, raked up from the ground where it has fallen, on the edge all around, and set tarred paper in like that around the edge, running down about eight inches. Then pack the silage down hard against the paper. Then take "slue" hay, swale hay, or any coarse grown hay, spread it upon the top of silo about six or eight inches deep. Turn over this paper on the top, bind it right over and lay on sheets of tarred paper, lapping four or six inches, running the ends up on the side of the silo a foot or two. Then over that put two or three feet of this green hay, treading the sides down firmly. That is all there is, gentlemen, of our present method of making a very fine article, except the character of the corn, which has just as much to do with it. When we first started we took a corn closely sown, corn planted as thickly as we could well do it, and the result was we got a mass of spindly, immature corn—slushy food. There was but very little sugar in the plant, and less of other ingredients to make it a valuable ration. We now plant about three and a half feet apart, dropping in a kernel to the hill, taking thirteen or fourteen quarts to the acre. Each corn shall be encouraged to start an ear. The ear upon the stalk is a question of maternity. The purpose of the existence of the stalk is the production of the ear. If it fails, it fails to fulfil the whole of its mission. But we plant it so thickly that it shall be somewhat

stunted in ear. We leave it until it passes the thickening process, past the resting stage into the closing period. At that time we have the highest pitch of excellence from a nutritive stand-point. And then we cut it and strew it loosely and let it stand thirty-six hours, if dry, nice, open sunny weather, for the reason that by that process it parts with from twenty to thirty per cent. of its water, which is a great difficulty in handling. Our present ensilage corn grows very bulky. I was cutting one day, and an Irishman going along, seeing me cutting it, said to me, "You don't know how to cut corn; it's me you ought to have there to be slashing it down." And I said, "You never cut such corn as this." But, he says, "Oh, I could cut it," and I invited him over to try. The corn averages five feet high. He took the cutter and took hold of some stalks and started cutting one after another, and he didn't cut more than two or three till he had twenty-five pounds. "Well," he says, "this is purty thick, that's so." He brought around his arm again, and as several dropped over his shoulder he kicked it with his heels, and looking at it, said, "A man may as well be slashing at fish poles," and quit. (Laughter.) It is very heavy stuff, but the ensilage corn proper is better. It has more of the sugary character in the stalk. The method of getting it into the silo varies with the various ideas of different men as to mechanical economy. But about as good a way as any other is to have a pair of trucks, or if you have not the truck wheels, take an ordinary waggon, and borrow another pair of wheels and put them behind. Put a platform on it and have it extend over the wheels. Have the plank at the back fixed with boards nailed across to walk on. When you are ready, go to the stook and take an armful and lay it on the forward end, building back. When you have got your load, drive to the silo, and lay it off where your man runs it through the cutter. We use 14 x 16 inch cutters of various makes. We cut about three to four and five tons an hour with the ordinary size cutter. When you open the silo you uncover one whole pit at the top. Take off this cover and leave the pit just as naked as can be. You take a fork, or what is better, a dung-hook, and rake it up as you choose. Now, then, you are confronted with the most convenient way of getting into your silo, and that must be settled by your own judgment. I would prefer to build a silo, if I had a barn where the cattle passed through, at the centre of the barn at one end, and then I would build a little railway track right in line of the cows, under the full length of the silo. Then I would get me a couple of hand-car wheels, build me a car with box capable of holding what was necessary, supposing I had twenty or forty cows, and so I would run the car right up to the edge of the silo. The front end should be open like an ice-house, cut right down. And you put up these boards as you fill it in front, and you carefully put in paper to make it air-tight. It will be quite difficult for you to secure the heat in these places, which will prevent its molding, and it will be a little sour or mouldy at that place. But you push down this silage from the top of the pit into this box which rests on the car wheels, and then when you have enough you run it along and leave it in front of your cattle. We are feeding to-day with silage made this year. We feed from thirty to fifty pounds a day, putting in two feeds of light corn fodder or of clover hay, say four or five pounds, at noon. That is the process. We find that the silo costs to build about $1 per ton of its capacity. Three tons of silage, we find, will be equal to the best ton of meadow hay as a forage. We pay then for silage $3 per ton, whereas it costs us in barn-room about $7 per ton to build your barn new. So you see we make a clear gain there of $4. There are some facts that are mysteries connected with this, and no one exactly understands it. I said that three tons of silage was the equal of a ton of hay. Five tons of silage we count sufficient to feed a cow 200 days. We raise from fifteen to thirty tons an acre. You can see for yourselves how important it becomes as a cheap ration for us. Fifty feet of this silage is estimated to weigh a ton, or forty pounds to the square foot. If you wish to get at the question—you have got, say, 20 cows. Five times 20 is 100. To feed your cows 200 days would require 100 tons, 5 tons to the cow. Now then, you can easily know what size silo you have to build by reckoning the size that would hold a hundred tons. You can very easily get at it by figuring—fifty feet make a ton. That depends somewhat, however, on the depth of the silo. In a silo 25 feet deep, 40 feet will make a ton; but the average is about 50 feet to the ton. I said there were some mysteries connected with it. The process of digestion in animals cannot be understood by quality or quantity giv-

ing analyses. The chemistry of digestion eludes analytical chemistry. For instance, three tons of silage, when dried, amount to about 900 pounds ; a ton of good hay, well cured, is about 1,800 lbs. The other 900 pounds remain unaccounted for, if three tons of silage is equal to a ton of hay. A farmer of Dundee, Elgin District, informs me that from a close comparison of 100 cows, he would not swap the silage he has made in the the past two years—two tons of it for any ton of hay. And he grew, on the average, twenty tons per acre, which, it he is correct, gave him the value of ten tons of hay to the acre in feeding value. Now that is not the only mystery connected with it. I took occasion once to make some experiments. I wanted to know how much June grass at a 2½ inch stage a cow would crop in a day. I didn't see how I could find out. I had a large lawn, and I shut my cow up in it and kept the grass at a 2½ inch stage. I fed the cow all she would eat. She maintained her flow of milk and butter, and to every intent and purpose was doing just as well as ever. I found that she had eaten at the rate of, I think, eighty pounds a day of this soft June grass. As the months went down into August the trial was kept up for a week in each month, and each week she held right up. I then took a corresponding amount of that June grass and dried it, and I found that the eighty pounds of green grass made about sixteen pounds only of dried grass. I then fed that to the cow a week, and she went down like a shot. Now, gentlemen, you can explain to me why it was she kept up in butter and milk on the green grass, and on the dry she shrank shrank and went down in her flow at once. You will explain to me also this other question. I have a theory on the matter. It is this : That the dry grass calls for such an additional outlay of digestive force. It must be hydrated, it must be soaked, which is the same thing ; it must be put through the process of digestion ; and that takes force. Everything the cow eats, or a man eats, takes digestive force, and force takes food ; and as a consequence, when she was called upon to eat sixteen pounds of dried grass, she had to devote a large portion of force to digesting it, as she could not devote it without detracting from her milk and butter supply. This ensilage, gentlemen, having been treated in this way, becomes a very cheap ration. Now you will ask me what is the practical outcome of it. On the ration that costs me 17 cents a day, with clover hay at $10 per ton, I can produce the same results with ensilage, bran and Indian meal for nine cents, a difference of eight cents per cow. Your President told you that there were problems which you must face. I assure you, too, we are most affected by it ; we are here to face one of them in the question of cheap production. The President told you you could not escape the forthcoming competition and the lower prices. The fiat has gone forth that we must make cheap cheese and cheap butter. We can't help it. Instead of crying at the business, instead of saying dairying don't pay, if we will just look at it from a business standpoint, we will have solved the problem for a long time yet—that is, the right kind of a cow or machine to put the stuff into, and the right kind of stuff to put into the machine. We have solved the problem of cheap production. I believe my ensilage costs me about 2½ cents per day for a cow. Cows will vary, you know, in their amount of consumption. It will make a difference of a half a cent if the water is warmed for the cow. But I can produce the same amount of butter as I have said to you on nine cents a day, on ensilage that cost me, at last year's prices for hay and bran and Indian meal and oil meal, 17 cents. (Applause).

Mr. CHEESMAN.—Are you quite sure that you evaporate 20 per cent. of the moisture before putting it into the pit?

Mr. HOARD.—We have so far as we have weighed it.

Mr. CHEESMAN.—Have you tested the temperature of the ensilage after three or four day's heat.

Mr. HOARD.—Yes ; I am glad you spoke of that. We are using a corn that we buy—the B. and W. corn. Those of you who have seen the little representation on the face of the *Dairyman* will notice a man 5 ft. 9 inches standing on a corn field, and you can see the relative height of the corn. This corn is a very wealthy growing corn, provided the seed is got from the south each year as planted. I planted it very early a

year ago last summer, but I found it produced only about half as much, and I say readily it was adapting itself to the normal evironment. Now the question of heating, I said to you, was a vital one. Why do you heat it up so? may be asked. Do you remember, every one of you, how your mother when she wanted to keep a pan of milk from souring put it on the stove and heated it up and set it away to cool; and in doing so she killed all the germs of fermentation that it had imbibed through the atmosphere, and it would not sour until it had imbibed from the atmosphere again a sufficient amount to make it sour. Ensilage is a corn fodder. We heat it to 120, killing all the germs and expelling the air, and we keep it sweet and free from all sour. We didn't let it go beyond that stage, because we cool it down by putting cold ensilage on it.

The PRESIDENT.—You began telling us some lessons you learned.

Mr. HOARD.—Yes. Many farmers would say to us, why do you send south after this corn? Well, because it would produce so much more that it was profitable to do so. Then they say: why, ain't our own corn good enough? Is not that as good as this ensilage corn? And we could not say but it was. We have no way of saying no. We find, gentlemen, that the southern corn is valuable for a reason we have not thought of. It contains so much sugar that it produces a high degree of heat. You know barley malts at a higher stage than any other grain, because it contains a large amount of saccharine. Now, the more sugar the higher the heat in corn. Again, they ask why does it sour? For the reason that the heat escapes as it forms and does not bring the silage up the stage necessary to have it come. And as a consequence it produces an acetic condition.

A MEMBER.—Do you think this common corn could be kept if it had more time?

Mr. HOARD.—I can't find all agreeing on this point. One or two silos that have been opened have turned out fairly; but I think it is due to the fact that some soil has more sugar than others.

A MEMBER.—Did you ever try sweet corn?

Mr. HOARD.—Yes, it is a very fine corn.

A MEMBER.—Do you prefer it to the southern corn?

Mr. HOARD.—No, there is no corn like the southern corn.

A MEMBER.—You can grow it much closer.

Mr. HOARD.—Well, I don't know. I don't know that you would make anything that way. You could have a larger quantity if you grew it one and a half inches apart. I plant about three acres to the bushel.

The PRESIDENT.—Have you any experience with regard to the value of ensilage compared with dry food?

Mr. HOARD.—So far as the manure is concerned, we have had comparatively speaking but a feeble experience. Our manure, you see, would be pretty good manure from the rations of bran we feed, and I don't know that there is any difference at all in it. But cattle thrive a great deal better on it. If you could see our cattle and hear the reports of our farmers, and hear them tell how the cattle look and come and see them, you would be very much pleased with it. At our Green Bay round-up last winter we had a long talk. Twenty-six pages of the report was devoted to ensilage.

Prof. BARNARD.—Why do you object to a stone silo?

Mr. HOARD.—I have seen a stone silo in our state freeze ensilage a foot in. You know frost will follow a solid stone wall as far as the wall goes. Have a wooden silo with sufficient air space. Air is the best non-conductor of frost in the world; consequently don't let any escape and your ensilage will not freeze, whereas if you put in a stone silo sometimes it will freeze a foot thick.

A MEMBER.—What do you think of a front wall?

Mr. HOARD.—I have no experience, except one man in our state has taken an old building about 24x16 and 12 feet high, and made a silo of it, and carried up the upper

portion of it above the twelve feet with wood. He has opened it and says the silage is all right; but he has not reported upon the question of freezing.

Prof. ROBERTS.—I find this year with taking Pride of the North corn, that I get between five and six tons of cornstalks, which I think would give over sixty bushels of corn per acre. Part of that I cut up when it was about in a condition to shook. Instead of wilting it as you did, I wilted it on the stalk. Now is not there, in your opinion, more real value in such a crop of corn (that is the first great object to get, corn), is there not there more food, other things being equal, in that way of raising corn than there is to plant corn over six inches or a foot apart? Now I am longing to get after this subject. I have also tried samples of Whitman and Birrel's specimens, that they were going to cut 100 tons from. I think they cut about twenty-eight acres. We want to get to the bottom of these things. Why is it not wise, after all, to try to raise the greatest amount to the acre?

Mr. HOARD.—Well, I doubt, Professor, whether it is wise after all, for you know if we reduce the nutritive quality of the stalk we gain in the ear, and you know the digestive functions. Now; how much did the sixty bushels of corn weigh?

Prof. ROBERTS.—It would weigh when taken from the field 3,000 pounds, or over it, and with very much less water than the ordinary ensilage.

Mr. HOARD.—But you know it will skrink in winter fully thirty-three per cent. It would be 3,300 pounds of corn—that would be a ton and 1,300 pounds. You get then seven tons and a half or thereabouts. I should hardly think that was the equal in nutritive character, corn and all, to twenty tons of southern corn.

Prof. ROBERTS.—The reason I asked this question is that there seems to be an opinion among ensilage men in New York to stop entirely raising field corn—not to raise so much stuff, but better stuff.

Mr. HOARD.—I don't know enough to answer your question conscientiously, and I don't want to answer it any other way.

Prof. BARNARD.—Dr. Hoskins argues that when a plant has grown to a certain extent if you cut it thus and put it into the silo, you prevent that change that should take place. Still it is a stronger argument, that of Mr. Hoard's, that three tons of ensilage is equal to a ton of hay. Another fact is that in a night the frost will change your corn so completely that it will make your cows go right down in their milk the moment it is given them.

Mr. CHEESMAN.—Is it not a fact that when corn is brought to the advanced stage referred to by Professor Roberts, that the wood fibre increases at the expense of the sugar?

Mr. HOARD.—Yes, I think there is a danger of carrying it too far. Whether Professor Roberts carried his too far I don't know, but there is a danger. I said I want to get it at such a pitch where both the corn and ear point to the highest stage of nutriment.

Prof. ROBERTS.—I have learned a great deal lately about sorghum, and one thing is we are cutting it too early, when the sorghum hadn't fermented,—and hearing the remarks made in regard to this sarghum plant led me to thinking. I found that when our corn was raised late in the season and stood thick just in tassel, that well fed and well bred cows would not touch it. Our cows would not. There was no sugar in it. Now, from the experiments conducted by the sugar men and men manufacturing sugar out of corn stalks, it seemed to me that in New York we are cutting corn when it is just past the closing period, and instead of shooking it and getting the water out in that way, we let the water evaporate one week longer, and we get the same results. Now, in a piece of rye we experimented with, we had some ten tons of green rye per acre. I thought it was about time to put it in the silo, but I let it stand a week, and it had gone down two or three tons. It was reduced rapidly, and it is surprising how soon water will leave corn stalks. Now, there is one more point. The only good ensilage I had was when I went to the field and cut field corn and put it in, and then I could make milk or butter or anything out of it. Somebody said that milk produced by silage was bad for children, and

they began to kick about it. I had to quiet down for a time, but I am going at it again. My way of handling the silage was this: I took what we call in our county a truck made for carrying a horse-power. They are built six feet wide and just two feet long. The balusters come even with the top of the wheels. I use that and the waggon, which I think quite as much of. We took two large poles and put them on top of the front axle and under the rear axle, making them about twenty-eight feet long; and in piling on between the wheels they bend till very frequently we have been stuck by the poles bending down to the ground. We can bring up two tons very easily.

Mr. HOARD.—We did the same thing practically. We took young trees, lasted them on to the forward baluster of the wagon and let them trail back, and bound them together and bored holes in the ends and set sticks up in them.

Prof. ROBERTS.—Then I draw them in with horses, and if you have some one to engineer it properly that is the best way.

A MEMBER.—How do you get this fodder up into your silo? Do you carry it up in your arms?

Mr. HOARD.—You set the cutter outside the silo and then run it up on the lifter.

Prof. BARNARD.—About the cutting machines. Are they all what is termed cyclo-cutters?

[Mr. HOARD here described several machines of different makes.]

Prof. BARNARD.—As to heating your corn, don't you think it would be better to put four feet in your silo instead of two feet. I have no difficulty all along September in getting 125°.

Mr. HOARD.—I would go by my own experience if I were you.

Mr. THOMPSON.—You raise this clay in the bottom of the silo, I understood, about the height of the stable floor?

Mr. HOARD.—Say you build a silo right on top of the ground and the clay would raise it up about a foot above the ground.

Mr. THOMPSON.—This swale hay, do you cut it or not?

Mr. HOARD.—We put it right on without cutting. Some cut it, but it does not do any good.

Mr. THOMPSON.—Do I understand that you plant one seed to the hill and three-and-a-half feet apart each way.

Mr. HOARD.—No. We plant the corn in drills, a kernel every six inches, and the rows three-and-a-half feet apart.

Mr. THOMPSON.—Have you ever tried ensilage for horses?

Mr. HOARD.—I never have, but several I know have.

Prof. BARNARD.—I will give you my experience in Quebec on the subject. We cover on the French principle, with earth, and we lose not a particle of anything at all. The earth answers from year to year and we put ten or twelve inches on the silage, two rows of boards and then cover with the earth. Our ensilage is good all through, at the top and bottom. Then if we are on a sandbank we have made a silo four or five feet in the ground. And we have gone further. Instead of putting paper and lumber, which is costly, we have taken very common boards and built it just like an ice house, with only nine inches between the boards. But instead of putting in sawdust or something like it, I took the sand from the bottom of the silo with the greatest success.

Mr. HOARD.—The reason we do not use boards now is because the silage does not settle evenly. If it drops away under the boards there is an air space, so we find we want a flexible, an air tight top. So we put on the swale grass.

Mr. HINMAN.—How do you get the ensilage out of your silo?

Mr. HOARD—By taking down the partition just as you put it in.

Mr. CHEESMAN.—I would like to ask Professor Roberts a couple of questions. Do you remember the temperature of your ensilage four or five days after putting it in?

Prof. ROBERTS.—No, sir, I didn't test it.

Mr. CHEESMAN.—Do you know the proportion of moisture?

Prof. ROBERTS.—No.

Mr. CHEESMAN.—I ask these questions because it is a very important point to illustrate the difference between past and present practices.

CHEESE-MAKING.

The following address on Cheese-making was delivered by Mr. John Robertson of London:

I do not intend to give you an address on the general principles of cheese making. I think these are fairly well understood, and they have been frequently discussed at these meetings. But what I propose to do is to bring before you where, I think from my own observation, the weak points are, and also where there is room for the most improvement, according to my acquaintance with the cheese trade. I don't want you to suppose that I am going to find any fault with any particular system or any one particular make of cheese, but taking the make of cheese as a whole there are two weak points to my mind that have been brought out very prominently both last year and the year before. And what makes them to me more important is this: They are the two points that bring out the real value of the product more than any other two points that I know of. Now, the first point that I want to bring before your notice in connection with it is this—the want of a perfect flavor in about nine-tenths of the cheese that is made in Canada. I mean to say that in nine-tenths of the cheese made there is room for improvement in that particular line. I don't know that makers are just in a position to appreciate such a matter as that may seem to them to be, but I think the buyer who buys for the old country, or who may buy for merchants on this side, but who receive their reports from the old country, will find that a great many defects in the cheese is attributed to some defect in flavor. And another point in this. Coming to even what we would call our best factories, take two weeks' cheese and compare them, and you will find probably three, four, or maybe five days that the flavor is pretty near right, and you find probably that the other two-thirds of the whole make has some little defect—not what you would call anything objectionable, but if they had been all up to the standard of the two or three perfect flavored cheese you would have had a perfect lot. Now, if we could get makers in some way or other to study these weak points and bring all their make up to the standard of the best, then we could have an article that would be second to none in the production of the cheese world. Then there is another thing I find. There is a want of uniformity in the quality and the grain and the body of the cheese. You go into a factory, and as you will go through a man's make and you will find the same as in the flavor, though probably not the same cheese; but you will find the solidity and the quality and the grain and the body of the cheese is just about all you desire. You will strike other days when it is a little too stiff, the grain is a little coarse, it wants that fine silky feeling that the finer cheese must have. Then you will find another day or two probably that it is a little on the weak side. Weak in flavor or body, but the lack of real flavor and the little weakness in body may be both in the quality and body, and it is just as an old Englishman told me about it. When they begin first time they think they know how to make cheese, but the only way I can describe it is this—it isn't a fine cheese, it isn't a bad cheese, not a poor cheese, but a meaningless cheese without any expression at all. There are a great many that way. You cannot condemn it as bad, and you cannot recommend it as fine. Another point. You take ten factories and 100 boxes out of each, and any man that has been handling them and buying them would need to cover quite a considerable section of country to get a thousand cheese that would be perfect. Now, I have been thinking this. What point could buy-

ers, and inspectors, and instructors bring before makers that would lead them to improve on these points. I think we were past discussing the ordinary principles of cheese making. We had to pick up two or three weak points which probably a great many makers did not know were in existence at all. I believe that even here, with all the instruction we have, it is in its infancy as a science, comparatively. I believe that we have never got down to the bottom of it. I believe there are elements connected with it that are something like Mr. Hoard's corn—that by some secret powers it worked so that the best men have not been able to divine and completely understand their movements. Now in taking up the first question—the defects in flavor—don't suppose I am going away back to the farmer. I mean to bring before you that, taking it that the milk is in good shape, that the surroundings are clean and the milk pure, even with all these surroundings and where we have good buildings, yet we find these defects crop up continually in the best factories we have. I think that only by making pure, clean milk, with everything clean in its surroundings, can we have pure and perfect flavored cheese. And I shall try to point out two or three things that cheese makers could take away with them, and not simply believe what I say but prove it for themselves. "Prove all things and hold fast to that which is good" is a good motto for cheese makers. The first cause is a very simple one. You cut a curd in two large pieces and start to cook it in two large pieces. These pieces of curd are so large that the heat in the cooking does not penetrate through and through, and there is a certain remaining amount of whey which contains a certain proportion of the sugar of the milk in it, and it remains inside until the outside is cooked; and that little remaining is left uncooked inside, and the process goes on and the maker is not aware of it, and the buyer comes around and he finds that there is a little bit of taintage in his cheese and he cannot account for it. I have seen it myself and I have tested it and proven it time and again. Take a big body and put it in the pot with a dozen others not half the size and some not one-third the size. None of you would expect the big body would be cooked as soon as the smaller ones. And that is the way the mischief is produced. Then supposing the cutting had been right. When I was making cheese as soon as I could cut it I would, say about three-eighths of an inch in green curd, and when the curd was cooked I liked to have it about the same size as your white Canadian peas would be, and there you have a curd you needn't hurt in working, for the heat would penetrate and the whey would be expelled out of every little particle, and you have nothing left that would contaminate. Then another thing. You let the curd lie too long in the whey after it is cooked, till the acid is too far developed. If the cheese maker has not got experience and observation and discernment enough to take it out in time he will have a curd that will be raw, coarse in grain, bitter in flavor and lacking in a great many points from being a pure cheese. I saw a report some time ago that came from London, England, of three different lots of cheese that were shipped for fine cheese. By the time they had got to be some age and had got upon the market the report was this: One lot, perfection, sold at 62s.; another lot, even finer looking cheese, a little defective in flavor, sold at 60s.; the other lot, bitter in flavor but other ways well made, well handled goods, but owing to the bitterness in the flavor sold at 57s. There was a little over a cent a pound difference between the sales of these lots of cheese. And the probability is the maker here would not have known any difference when it left the factory. Now that is not a solitary case. I believe there is not a week in the whole season through but there are cheese going from this and the other side where there are 5, 10, 20 and 40c. difference in the price of them. Then there is another thing, too, that sometimes is not noticed. You dip a curd too soon and you will not have a fine cheese; you will have a cheese that is weak, and if it gets much hot weather it will cut open and the heat and the weakness and the want of development and ripeness in it will germinate gas within, and this gas must have a place to hold it, and it will make a little den for itself, and that is quite plenty to spoil the flavor and taint the cheese. Another particular point we have been at a loss to reach is this: What is sweet dipping and what is acid dipping? Well, what would be to one man's mind a perfectly sweet dip would be to another's an acid dip. And we have never been able to find out anything that could test a curd and tell when it is just exactly at the right point, not before nor after, but just when it should be taken out of the whey. There is a great deal depending upon the

man's judgment and the man's taste, and even the man's sensitiveness, because there are many men who have not got sense acute enough to discern what to others would be apparent. Then there is another point, and it is just the thing that you could almost slip past without noticing it—the point when the curd reaches a proper stage of maturity, so that it is ready to be torn up and exposed to the air and ground and prepared. That, I think, causes as much unevenness and ununiform make of cheese as a great many other points. In order that the curd may have a perfect silky feeling, in order that it may have a perfectly solid, compact body, a perfectly fine grain, and that grain so compacted and put together that it forms a perfect solid substance, in order to have this perfect cheese depends exactly when that curd is taken out of its warm nest and it is exposed to the air, and it is arrested from proceeding with its acidity and its ripening and its maturity. There is just a particular point where it has got to come, and where it should not be allowed to go any further. If a maker could get his curd brought to that point day after day and week after week he would make cheese perfectly uniform, other things being right, with no power to tell the difference of its make from another. Now that is where English makers are ahead of us.

Mr. HOARD.—Did you ever know one of these English makers to try his hand on the job over here?

Mr. ROBERTSON.—No, I don't think I did.

Mr. HOARD.—Well, I believe why you have so much uniformity of the cheese in England is owing to the uniformity of the temperature.

Mr. ROBERTSON.—I admit that has a good deal to do with it, but all who are connected with the business know this, that, supposing the makers exercised their judgment as best they could, you visit four, five, six, eight or ten factories and you know perfectly well there is a great difference in the goods. But your judgment is such that you have no hesitation in passing them all for fine cheese. Maybe after a month or so you get a list, these are fine, but here are some we don't approve of. Probably they got a week or ten days of very hot weather or in transit were roughly used. If there are any little defects in the make by the time it gets home it is developed, and the probability is if we had them here in the state we sent them we would not notice anything wrong. So that it is only just by the closest observation that cheese makers are able to get hold of these fine lines, for they are not very easily seen by some persons. I think that is about all the difference. You probably take twenty or thirty makers out of this meeting, and you will find that they are working about on the same general principles, the same plan, the same system and all about on the same road, and yet when you see the product of their work you have as many different kinds of cheese almost as there are makers. Now, why is this? How is this to be overcome, and how are we to get so many minds to act and think alike? Well, the only way I know is this, to keep hammering at it day after day and year after year, and those who take telling and who wont take advice ought to be "put out of the house," as an old woman said. I think makers when they do make a change go too far. That is another thing makers must guard against. I have gone myself to a maker and told him where little defects were, and given him my judgment. And the next time I went out to see his cheese I questioned him how he had gone so far astray. He says, "I did exactly as you told me." I say, "You did exactly as I told you, but you did more than I told you. You did what I didn't tell you to do. If you had stuck to what I told you to do you would have been all right." Now, there is the trouble, that makers and even buyers are at a loss to understand our English language. When you get into a cheese factory you have got to talk in a cheese language or they will go astray. Another point spoken of was the climate. I hold that if we do have weather far below zero, we ought to have buildings that would keep the same temperature the year round. And in that way I think we could have during the summer months far greater uniformity in cheese than we have. According to my judgment, I think we have finer cheese here (notwithstanding there are two Americans present), but at the same time you will find there is a greater uniformity in the make of a great many American cheese than there is among Canadian cheese, there is not such a variety. I am speaking now of full

cream cheese there and here. And I think one reason why it is so is this: The makers over there, while they may not have studied up some of the fine points, have studied uniformity as to quality and make probably more than our own men have done. I don't mean what you call a great deal of non-uniformity among the factories, but there is a great deal of what is not uniform in their own individual makes. I think they should be remedied, and could be remedied, with care and attention. Having the cheese made right and the curd brought to its proper stage before it is ground, all you have to do is give it a proper proportion of salt. Mix it up thoroughly and give it a good clean room where it will not be too hot, and the cheese will about make itself after that. I believe as far as my own experience goes that the cheese is made, its character is formed, when it is ground to prepare for salt. (Hear, hear.) You may improve it a little or you may hurt it a little afterwards, but the character of your cheese is formed during the process of manipulating till you get it ready for the salt. And the salt added preserves the good flavor and quality, and you have brought it to the last stage of perfection. Now, these points—if you just take a note of them, and just look past over your own experience and review what your own experience has shown you in the past, you will say I have spoken some things that are quite true. There is not a maker in the room but will admit that there is a great difference in his make, and he can't give a reason for it. Now, that is where one maker excels another, just by study and close observation in bringing these little fine lines to the proper focus. Study these points, and make enquiry of your neighbors, of Mr. Derbyshire or Mr. MacPherson or any other buyer in the country, and if the lines that I have suggested are the proper lines to follow, then get out of these fallacious weak points, so that your cheese will be of a uniform character and quality. Then I think you will be almost convinced to come to the conclusion that as the testimony of those men who handle the goods after we lose sight of them is unanimous, there must be something in it. And I have no doubt you will try to find out in one way or another how to obviate these conditions by making an article of pure flavor with a good body and good texture. Then you will be at the top of the ladder, and I hope you will have wisdom enough when you get there to stay there. (Applause.) I noticed one thing in Brother Hoard's paper I would like to refer to. I see one of the points of excellence with the Board of Management at their exhibition of butter and cheese was the flavor. And how many points out of the hundred have they allowed for flavor alone in butter? Forty-five for flavor alone. And in judging the cheese they put down forty points for flavor alone. Now, if anyone had asked me my impression I would have put down butter at sixty and cheese at fifty. For if the flavor is defective all the rest is nothing. Over on the other side of the creek, over there in the States, they are taking notice of these fine points, and if we don't look out they will be ahead of us, for Mr. Hoard will take back all the good things he has heard here and give them to his people.

A MEMBER.—Does Mr. Robertson think the salt arrests the acid?

Mr. ROBERTSON.—It is my opinion it would. It may arrest it in two ways. You know I have just thrown out these hints, and I expect to-morrow to discuss these points more fully; and, among other points, that temperature is the main factor in the rapidity or the slowness with which curd moves on through its various stages, and if you take and throw a lot of cold salt on it, to a certain extent it will cool it, and to that extent arrest the process of the formation of acid. And it dries it, hardens it, and it will skim the curd a little quicker. Well, whether that is arresting the acid or hiding it I can't say. I know it does to a certain extent, but whether because it cools it two or three degrees, or whether it actually arrests it or not, I can't say.

A MEMBER.—At what temperature should curd be put to press?

Mr. ROBERTSON.—A little would depend on the season and the temperature you would like to have it after you went to press. I always used to put it to press at about seventy or seventy-five degrees. But I suppose about seventy-five to eighty is low as you could get them here in summer.

A MEMBER.—You didn't say what your rule was for dipping curd?

Mr. ROBERTSON.—That is one of the points there is no rule for. That every man must find out for himself, because different localities would require different rules. And another thing would be this: A good deal would depend upon the rapidity with which your curd was working. If it was working quickly you would have to dip quickly. As a general rule, as far as my experience goes, I would dip the curd certainly before I could almost perceive any acid, though I knew that it was quite at hand. I never would allow the curd to remain in the vat till the acid was fairly well developed amongst the whey. I, or rather my son, rejected a lot of September cheese the other day, bought at a low figure. But that was the fault the cheese had. It had lain too long amongst the whey before it was dipped. These cheese had a coarse grain and a weak body, and just a kind of raw feeling about them, and the flavour was perfectly bitter. The consequence was that that very one point might have saved that man's cheese.

A MEMBER.—Do you use a hot iron in dipping?

Mr. ROBERTSON.—Most makers do. It is a safe thing. It gives you an indication of the acid beginning to start. The maker, if he is properly up to his business, should know from the feeling of his hand and the simple smell of his nose where he is.

The PRESIDENT.—I might tell you I have experimented somewhat in that matter, and the hot iron is a valuable test with regard to determining when to draw the whey. But the condition of the whey, as Mr. Robertson has told you, is a very important thing to consider. But if your curd is firm and solid, the time of dipping is not so important. I believe we have an erroneous idea about dipping curd. I don't think it is the whey *on* the curd that does the injury, but the whey *in* the particles of curd. I tell you what I did in experiment. I broke up a vat of curd very fine, expelled the whey out of it, had it quite firm, so that it would creak under the touch, and I left it on three hours with the temperature at ninety-eight. Then I made a fine cheese and treated it as other cheese is treated. Now if that curd was soft and mushy and contained a bit of whey on the inside of the particles of curd, it would be fatal to the cheese. I hold it is the whey inside the curd where the injury is done.

Mr. ROBERTSON.—You mean that the curd has not been properly cooked.

The PRESIDENT.—Yes, or the whey expelled.

Mr. ROBERTSON.—Then the curd can't be said to be properly cooked until it is out?

A MEMBER.—How long then do you cook it?

Mr. ROBERTSON.—Cook it until it is ready. (Laughter).

The Convention adjourned till morning.

SECOND DAY.—FORENOON SESSION.

The session opened at 10.30 a.m., half an hour after the usual time, a good many delegates who went for a sleigh ride in pleasure sleighs provided by the Mayor not having got back till that hour.

The President took the chair and announced that the first business would be the presentation of the Financial Report.

TREASURER'S STATEMENT.

Mr. P. R. DALY, the Treasurer, then read the following statement :

P. R. Daly, in account with the Eastern Dairymen's Association.

RECEIPTS.

To balance from last audit	$ 273 06
" Members' fees	127 00
" Government grant	1,500 00
	$1,900 06

DISBURSEMENTS.

Annual Convention at Brockville—	
Staff speakers	$142 00
Cheese instructors	22 00
Auditors	27 70
Reporter	60 00
Printing	48 59
Other expenses	157 70
Expenses of delegation to Toronto	85 50
" Board meeting at Ottawa	159 50
Paid Jas. Whitton, instructor	250 00
" H. Bissell "	130 00
" N. Fields, "	180 90
" Secretary's salary, postage and stationery	140 00
" Treasurer's salary	27 00
Balance on hand	469 17
	$1,900 06

AUDITORS' REPORT.

We, the undersigned Auditors appointed to audit the books and accounts of the Treasurer of the Dairymen's Association of Eastern Ontario, beg leave to submit that we have examined the accounts and vouchers of said Treasurer, and in every case have found them correct. Total receipts, $1,900.06 ; disbursements, $1,430.89, leaving a balance on hand of $469.17.

NORMAN H. FIELDS,
J. D. HAMILTON, } *Auditors.*

Peterborough, 4th January, 1888.

The TREASURER.—In order to understand this balance more fully, I would say that the expenses of this convention are not yet taken into account.

The PRESIDENT.—You mean the receipts ?

The TREASURER.—The receipts, yes. The receipts of this convention will fall into the hands of the board to be appointed for this year. I am glad that there is enough now on hand to enable us to come out with a clean sheet. (Applause.) For the last ten years the treasurers have had to borrow several hundred dollars each year in order to meet the expenses of the annual convention. This year we will be able to get along without troubling anybody for money.

Mr. DERBYSHIRE.—I have much pleasure in moving the adoption of the treasurer's report. It is a very creditable showing. It is pleasing to us all to know that the Association can go on now without the customary borrowing. It is a source of much pleasure to the meeting to see the result of great economy and wise management. I have much pleasure in moving the reception and adoption of the report.

The PRESIDENT.—The motion is now open to discussion. It is now in order for anyone present to make any remarks upon the report. Does anyone wish to say anything? No response being made, the motion was declared carried.

The TREASURER.—There is one matter which is not reported which I would like to have explained. We were much embarrassed in the matter of the appointment of instructors in sufficient number on account of the lack of funds. We concluded to send a delegation to Toronto to solicit the Ontario Government to give us a grant of further aid to pay the instructors. I will take the liberty of calling upon Mr. Derbyshire, as one of the delegates who interviewed the Government, to report.

Mr. DERBYSHIRE.—I had the pleasure of being one of a delegation from the Eastern Dairymen's Association, in conjunction with a similar delegation from the Western Dairymen's Association, waiting upon the Commissioner of Agriculture to solicit him to make a further grant to us to pay the instructors. The scheme we presented to the Commissioner was to appoint four instructors for Eastern Ontario instead of two, and a like number for the Western Association instead of two. This would be eight instead of four, all to be under the control of the director in the department at Guelph. That all the instructions be issued from Guelph, so that the same instructions would be given in the east as in the west. Then we would have similarity of goods and of the very highest standard. That was the idea we laid before the Commissioner of Agriculture, but unfortunately for us in the east the delegation from the Western Association was not thoroughly in accord. It seems that they allowed politics to get into the Association, and this resulted in their not being fully united in the matter of what to ask from the Commissioner with the delegation from the east. Our scheme then met with failure. Had we been united there is no doubt that the Commissioner would have granted our request, as he expressed himself as believing that the carrying out of our plan would do a great deal of good. No association can succeed if they allow politics to get into it. (Hear, hear.) We in the east feel proud that we have never allowed political preference or prejudice to influence us in the discharge of our business in connection with the Association. (Applause.) We have always put the best man in the best place—we have live men at the head of affairs—and this explains why we occupy the position we do to-day. If the western people are determined to go back we are going ahead in the east. (Applause.) We are going to have the four instructors. If we cannot get the government to pay them the factories will pay them. We are going to make an assessment this year of $10 a factory—that was the idea the committee resolved on last night. Each factory will be assessed, but it will be entitled to thorough instruction. We are going to succeed in the east. We want to show the people of the world that we are progressive, and that we are bound to keep up with the times in which we live. (Loud applause.) As I said, if the western men had united with us the Commissioner would have granted our request, but we're going to show the government that we were in earnest and that nothing will keep us back. When the government sees that what we asked is absolutely necessary, they will very likely help us. I hope they will. (Applause.)

REPORT OF NOMINATING COMMITTEE.

Mr. Hinman read the report of the nominating committee as follows :—

GENTLEMEN,—We, your nominating committee, beg leave to report as follows : President, Mr. D. M. McPherson, Lancaster ; 1st Vice-President, D. Vandewater, Chatterton ; 2nd Vice-President, Jas. Bissell, Algonquin.

DIRECTORS—No. 1 Division, W. Eager, South Mountain ; No. 2 Division, Edward Kidd, North Gower ; No. 3 Division, T. H. McCrea, Brockville ; No. 4 Division, Jas. Haggerty, West Huntingdon No. 5 Division, Platt Hinman, Grafton ; No. 6 Division, Henry Wade, Toronto.

AUDITORS—Jas. Hamilton, Foxboro, and T. Miller, Spencerville.

Mr. HINMAN.—I beg leave to move the adoption of the report.

Mr. DERBYSHIRE.—I feel very great pleasure in supporting the report of the committee. The officers for the past year have shown great ability in the discharge of their duties. I assure you that there could not be a nomination that I could have liked more, and I heartily support the motion. The presiding officer has given much time and great attention to the business of the Association in the past, and I think we could not do better than to elect him again.

Mr. MCCARGAR.—Is that the usual way of electing officers?

The PRESIDENT.—This has been the custom.

Mr. MCCARGAR.—Is it the usual way?

Mr. DERBYSHIRE.—Yes.

Mr. MCCARGAR.—I think the members should have a chance to elect the officers.

The PRESIDENT.—I made the proposal that the members should elect the nominating committee. I asked that they should do so twice or three times, but no one taking the matter up it was thrown back on my shoulders to nominate the committee. I do not think that any blame can be attached as I gave it out several times yesterday, asking the meeting to elect the committee. I felt a delicacy in nominating the committee, and I am glad Mr. McCargar brought the matter up. If I hold the position of president for another term, I shall insist that the meeting elect the nominating committee so that the members will be more properly represented.

A long and rather warm discussion then ensued upon the point raised by Mr. McCargar, when the convention proceeded with the nomination and election of president.

The following candidates were named for the office of President :—

Mr. McCargar, nominated by Mr. Brintnell, seconded by Mr. Fairfield.

Mr. Derbyshire, nominated by Mr. Bell, seconded by Mr. Foster.

Mr. McPherson, nominated by Mr. Derbyshire, seconded by Mr. Cheesman.

Mr. Derbyshire retired from the contest, and the vote resulted in favour of Mr. McCargar who received 38 votes, while 32 were cast for Mr. McPherson.

A re-count was called for.

The PRESIDENT.—I am perfectly satisfied that the vote has been properly taken, and I am, of course, beaten. I consider that I have faithfully discharged the duties of the office during my term, and in retiring now I do so with a considerable feeling of pride. Our Treasurer has given you a report to-day which shows that we need not have recourse to the usual methods of tiding over the debt from year to year as we have done since the Association was organized. It is quite a satisfaction to me to leave the chair under these circumstances. The financial condition of the Association was never better. This gives a kind of guarantee that the Association will go on to greater and more lasting success than we have had in the past. I believe that we will go on to do the work that is before us. We have already done much; our influence is being felt all over Canada; and I am convinced that we will grow to greater power in the land. (Applause.) I thank you for the courteous attention, gentlemen, that you have given me during the sessions of the convention while we have been in Peterborough. (Loud applause.)

The president left the chair and the president-elect presided over the meeting.

Mr. WARRINGTON.—Mr President and gentlemen: I have much pleasure in congratulating our good and well-tried friend, McCargar, on his accession to the chair; at the same time I think it is only due that we should render thanks to the late president for the highly satisfactory manner in which he has filled the chair. Both the late president and the president-elect are friends of mine, but my vote was given to Mr. McCargar because I am opposed to monopolies of all kinds. It was not because I had any personal feelings whatever against Mr. McPherson that I voted against him, for I don't know of a better man to fill the position; but I felt that it was better that a change should be made to allow others to come to the top. I now move a vote of thanks to the late president. He is a man well known. He occupies a place among the foremost in the cheese trade of the world.

He is at the head of sixty-six factories and I don't suppose he has a rebel amongst his flock. They do what he thinks best in ninty-nine cases out of a hundred. He is a power in the trade in England, both in London and Liverpool. We cannot do anything till we hear from Allan Grove.

Mr. BELL seconded the motion, and it was carried amid great enthusiasm.

Mr. MCPHERSON.—I thank you for the very enthusiastic way in which you received this vote of thanks for the way I did my duty when president. I have always done my best to further the interests of this Association, and as I have done in the past so will I do in the future. (Applause.)

Mr. MCCARGAR.—I feel my inability at the present time to take the chair, but if you will bear with me to-day I venture to say that I will be better posted by the time of the next meeting. I assure you I cannot find words to express my feeling towards the friends who voted for me to-day. I had no intention of being a candidate for the office, I spoke to no one for a vote, and in fact I declined to run when others asked me. I thank you, gentlemen, for placing me in this position, and I promise you that I will fill it to the best of my ability.

The election of the other officers was then proceeded with, and resulted in the return of those recommended by the nominating committee, after which the convention adjourned till the afternoon.

CHEESE INSTRUCTORS' REPORTS.

The reports of the cheese instructors were read as follows:

It is with a certain amount of timidity, as well as pleasure, that I present my report as Cheese Instructor for the district between Kingston and the Province of Quebec. I commenced work in Leeds county factory on the 21st day of June, and finished in Dundelia factory on the 20th day of August, having visited and gave instruction in sixty-five factories.

I also made milk tests wherever the proprietors or patrons desired. At the time I visited those factories I found twenty of them making strictly fine cheese, thirty-nine making fair, and six very poor stuff. In some cases, I am sorry to say, the fault was directly in the cheese makers; but the primary cause for the most faulty cheese can be traced to quarters other than the inefficiency of the average cheese maker of eastern Ontario. Having made the statement that faults exist, and not all with cheese makers, I would be unjust if I did not try to explain where at least some of them lie.

In the first place three-fourths, and perhaps a greater proportion, of the cheese factories of eastern Ontario are totally unfit to make cheese in—only in about three months in the summer season. In some factories that I visited this summer I could look down through the floor and see the festering compound down beneath, and up through the roof and see the sky, and through the cracks on either side and see the landscape round about; and no manufacturer ought to expect fine cheese at the hands of any cheese maker that he asks to work in such a building.

This is, I think, one of the greatest troubles with which the cheese industry of eastern Ontario has to contend. Difference of opinion exists among those interested as to where the fault lies; and if this convention could determine its place, and be the means of instituting a better class of buildings, it will have accomplished a grand mission, and be the means of putting thousands of dollars into the pockets of the dairy farmer of eastern Ontario.

There are other minor troubles existing which are directly the fault of the managers of the factories, viz.: poor, worn out machinery, improper drainage, etc., etc. And not the least, that the keen competition in business many times induces the proprietor to receive from his slovenly patrons milk that he would not, if he did not know that his rival factory would be only too glad to get it, taint and all. But if all factorymen could

be made to believe that every cheese made out of such milk would drag one of the finest cheese down to its own level, they would then see the harm they were doing the business they were trying to cherish and profit by.

I believe, after all that has been said on the subject of the production of milk and its manufacture into cheese, it is very unnecessary for me to add anything more in this report, believing, as I do, that more real good is accomplished by good sharp discussion or intelligent criticism than by long, tiresome papers by one man.

NORMAN H. FIELDS.

I submit to you with pleasure my fifth annual report as cheese instructor for the season of 1887. I can assure you it is gratifying to me to be able to report to you the steady and growing improvement in the quality of our cheese. I visited and gave instruction in 110 factories, and would say it has become a pleasure in most cases to go into a factory and see the pains that most makers take to make fine goods. We still have some delinquents that should be weeded out, but as long as patrons of factories will insist on having the cheapest manufacture, regardless of reputation as a first-class maker, just so long we will have trouble in the cheese camp.

Allow me to call the attention of the directors or managers of factories to the fact they must invest more money in their buildings to give the majority of makers a chance —as we cannot allow ourselves to stop just when the cheese is made, for if we do we surely end in failure. For right here we have the curing room with all its faults and failures.

I can safely say that there is not over one-tenth of our rooms fitted up to insure a fine quality of cheese—the maker having exhausted all his skill in the make-room his cheese is doomed to failure—for the simple reason that the curing-room is subject to all the changes of the atmosphere.

We must insist on factorymen giving cheese makers better facilities for the curing and making of cheese.

For instance, in my own immediate section I know of not a few makers that made fine cheese through the months of May, June, July, August and first half of September, and failed the balance of the season for the simple reason that they might as well try to make cheese outside the building as in, only they are a little more protected from the storms. Now, gentlemen, any experienced cheese maker will tell you the effect this will have on your cheese. The curd becomes cold and lifeless, goes to press in that condition, and consequently we have a clammy and salvy cheese as the result. You will see the importance of having our factories fitted up with comfortable rooms for making and curing; also, we must insist on having a stove in the manufacturing room for spring and fall make.

A hint to cheese makers: The ranges should be perfectly straight and level, cheese straight and stand up well, at least 9½ inches, so that when you enter the cheese room they are pleasing to the eye. All it requires is a little attention at this point. Cheese should have neat clean top cloths, for if sour and dirty the ends of your cheese will become cracked and a defective rind is the consequence.

Cheese should be turned regularly every day and see that the shelves or setts are kept clean. The cheese being well cured and taken care of, next in turn comes boxing and shipping. This is another important point. Be sure and cut boxes down level with the cheese; see that the lids fit properly; have a neat little brand of the name of the factory close to the lap of the box, and I would just say here, do not waste so much ink or pencil in marking weights on boxes, figures that take up the whole side of the box are not required; nothing looks neater than nice plain figures. We must also have the best box possible in the market. I for one will insist on holding box makers responsible for any damage sustained to cheese by having faulty boxes. There has been a great deal of trouble and loss the past season by shipping in green or wet boxes, some makers having lost several hundred dollars from this cause alone. More particularly was this so in the Madoc section. Now, a little advice to salesmen. Never allow your cheese to be hauled

to the different points of shipment through the rain, causing the dealer a great deal of trouble and in not a few instances a heavy loss, the remedy being so very simple and at small cost that you cannot afford to run those chances. Each factory should be provided with say half-a-dozen tarpaulin covers, so that in catching weather they can keep their cheese dry in hauling. It has come to this, that factorymen must have the interest of the buyer at heart, competition being so keen and margins so fine that the cheese dealer cannot afford to run any chances in this direction.

A word to patrons: Do not send impure milk to the factory to be made into cheese. You might just as well scatter peas on the ground and expect first-class wheat as to send such milk as I have seen in my tour through the country, in not a few instances, to be made into cheese. I inspected milk in 45 factories, and in some localities that I visited I had to perform the unpleasant duty of sending letters to patrons that their milk was impure, caused frequently by stagnant or impure water, and you would be surprised to see how many there are who take water in their pails and forget to throw it out again. There are also those who like to make their own butter. How many petty larcenies there are in that direction. It appears to try some of the most honest patrons to allow the beautiful cream all to go to the factory. In conclusion, as a cheese maker as well as instructor, I appeal to this convention for some assistance in this matter. We have inspectors of different callings paid by the Government, and the day has come that we must insist on having milk inspectors. A great many of our makers are placed in such a position that if they should detect or even find fault with the milk sent by the majority of those patrons, the offenders leave the factory at once and try some other place to carry on their dishonest work. I hope this will receive your most serious consideration.

JAMES WHITTON.

EXTENSION OF DAIRY INSTRUCTION.

Professor Robertson read the following report of the committee on means for the extension of dairy instruction:—

Your Committee beg to recommend (1) That special Cheese-makers' Conventions be held at four or more places within the bounds of this Association; Lancaster, Morrisburg, Brockville and Campbellford are suggested as central places, and the month of March as the most convenient time. (2) That an effort be made to enlarge the work done for the instruction of cheese makers by the employment of at least four instructors during the whole of the working season of the factories. (3) That every cheese factory be requested to subscribe $10 to a fund to meet the increased expenses, and that the Association continue to devote as much of its funds as may be available to the payment of such instructors. (4) That such subscription by a cheese factory entitles it to at least three visits from one instructor for inspection and instruction. (5) That the joint fund formed by the grant of this Association and the contributions of the cheese factories be administered by the Executive Committee of the Association in conjunction with the Superintendent of Dairying at Ontario Agricultural College. (6) That meetings of the patrons of the factories be held, especially during November and December, for the discussion of the economical production of milk and its preparation for delivery to the cheese factories.

All of which is respectfully submitted.

D. DERBYSHIRE.
W. EAGER.
JAS. W. ROBERTSON.

Prof. Robertson.—In moving the adoption of this report, permit me to say a few words in explanation. I think you all recognize the need for dairy instruction among cheese makers. We have recognized that need in all the workings of this association during these past years. But we need further organization into a system whereby that instruction will be made valuable for every cheese maker. There are many cheese makers who would like to, but cannot, come here by reason of the expense incurred and the time they would have to lose. And we need an organized system, that it may be a permanent system, not only good for one season and then fail to fulfil its main objects, but that it may be increasingly useful in its work. Then we need to have this system so formed that it will extend the work of instruction, and be more thorough than it has been—not so much in the character of the work done by instructors, but in the application of their work, that the work may be reliable and uniform. Now, reliable work in instruction can only be obtained when it is followed up by successive visits from the instructor. The purposes of these proposed conventions is to realize these ends—more systematic, more extended, more thorough, and more reliable. The means by which these ends can be best attained seem to me to be summed up in a programme that might be prepared for these conventions. By devoting a good deal of time to the instruction of cheese makers on the best methods of testing milk, in the proper and safe use of the instruments of which they probably know the names and very little else further than that they are presumably for testing milk. Then discussion could be carried on to the realm of cheese making, so the makers could get a full season of instruction as to the theory of cheese making, that they might be able to more intelligently carry out the processes their instructors would recommend to them. That would, perhaps, explain the first recommendation. Then the second recommendation provides for the enlargement of the work by cheese instructors. No one more than those on this committee can more heartily appreciate the work done by instructors in the past, but we must continue to make progress, not only in regard to cheese making, but in regard to our instruction as to how to make cheese. We can make progress by trying to help the manufacturer. You all know that the cheese instructor, be he ever so diligent, can only cover so much ground. I was surprised to learn that Mr. Whitton was able to cover so much ground as his report states. But still, if we had twice as many instructors we could reach twice as many factories. Then we could help the cheese makers longer each season. I noticed in reading Mr. Field's report he could visit only two months during the season.

Mr. Fields.—I only had office for the time since July.

Prof. Robertson.—But during all the past history of this association we have never been able to get cheese instructors to continue their work through because we hadn't money to pay for it. Now the experience of all cheese makers and buyers has been that cheese makers require as much help during October as during any other month. Therefore, we should try to get the benefit of instruction for a longer period. I'll point out how this will be of benefit to the cheese maker. A systematic supervision will always make a man do better work than if nobody looks after him. The fact that a cheese maker expects a visit will make him keep his factory in better order. Now it is not possible that the president of a factory in every case should be an expert cheese maker. They are not expected to know much about the process, but if a president knows an expert is coming to his place, it will make him have his factory in working order. Then if these visits were frequent the benefits would be increased. The cheese maker would have more benefit from frequent visits than only occasional ones. There would be much help given to the business through the effects of these visits to cheese factories. If a cheese instructor will do his duty faithfully we will very seldom have occasion to report as to the premises where stars twinkle through the ceilings. An instructor should instruct as to how best to build a good factory, and impress upon all the economy and necessity of having good factories. Then there would be a beneficial result to each patron of the factory. With the visits of these experts should be combined the work of inspecting the milk. We must be careful in inspecting our milk product, if we are to maintain our reputation as producers of the finest cheese. I had occasion to examine some cheese this year which I found to be very inferior, simply because I think the patrons of that factory were dis-

honest in furnishing inferior milk. We must protect our reputation by making provision for the inspection of milk. Then we need to protect the rights of the individual patrons of each factory if the business is going to prosper. I know of nothing that will kill a factory quicker than the suspicion that the patron is not getting his rights. If it is mooted that a man in a neighbourhood is not sending good milk, a good many will withdraw from the factory. Therefore, the inspection of the milk will help the men who supply pure and honest milk now by allowing them to do their business with a degree of satisfaction. In these respects we can safely recommend to you the adoption of this report, and we not merely recommend its adoption, but we can, I think, confidently expect that the members of this association and other dairymen in the province will co-operate with us to realize its ends, our aims. We need money for this purpose, because cheese instructors cannot be obtained unless we are willing to pay them well for their services, and you needn't expect to get the work done for less ; but as we get better men, men with longer experiences and greater ability, we may expect to pay them even more. You always find that the more valuable a man becomes the more he can get, and there is no chance of us getting a good article in a cheese instructor unless we pay for it. Now, we can pay for it ourselves with more advantage to ourselves than if we seek help from outside sources. In attending farmers' meetings lately I have noticed this tendency whereby our farmers are led to expect some help from outside sources. Now the great secret of success comes from that persistent self-reliance that will bring out of a man all that he can do for himself, and the lack of success often results from a man depending too much upon such outside help as makes him stultify himself and his own powers. Now, by the plan proposed, every factory needing help is expected to subscribe $10. Now $10 is a very small sum. I think every factory would sustain a loss of $100 a year by not having the instructor. I hardly know of a factory that could not have got at some period of the year say a quarter of a cent a pound more for some months' make if that make had been finer. Though every factory can't get the top price, yet if all the factories made fine cheese there would be much higher prices. If we compare this small charge against the possible increase of profit it will appear but a small factor. I think that this sum of $10 a season should be paid by patrons and not by the owners of the factories. Now let me say why I think so. If the instruction given to these men results in the making of better cheese and it sells for even a 1-16c more money, the patrons are the ones who get the increased price; therefore, the patrons are the persons who should bear the increased expense. Not only in that respect, but I think the patrons would be willing to bear the expense if they just thought of the satisfaction every patron would have in knowing that the milk supplied to his factory was periodically inspected. The charge on ordinary factories would not exceed from, perhaps, 10 to 25c per patron, and I don't think you would find a single patron who would object to paying that figure for the sake of having the milk officially inspected.

Mr. Derbyshire.—I know of one man who would not give it.

Prof. Robertson.—Well, Mr. Derbyshire knows of one man who this past season attained the magnificent result of getting no less than $32.92 for the whole season's milk of four cows. That man would object. (Laughter.) So in this way it would be charged against the milk and would not be felt by anyone, and I think it would start a system of inspection which would grow necessary and large. The result that would be shown at the end of the year would justify, I think, the recommendation of your committee. As to the collection of this money and the organization, this matter could be carried on by the department at Guelph. I am not anxious to take more work upon myself than I already have, though I am never anxious to shirk work. As has been said, a man should be thankful for the opportunity to work. Now the department at Guelph is thankful for the opportunity of serving dairymen. (Applause.) So that any correspondence in this matter, that might seem burdensome to the secretary of your association, could be carried on between the factories and this executive committee through the department at Guelph. I think we could reach every factory in the whole province, and I think we could get the co-operation of 75 per cent. of them, and we could get them all in next year or wipe them out. In this way the whole business of cheese making could be made more profitable to every man engaged in it, because this would help us to know better where we work and

how to work to the best advantage, and help us in such a way to get learning and improvement every year. The other recommendation, I think, will commend itself to every farmer and cheese maker here. If we could have a meeting when the factories close for the season, and discuss then the weaknesses and successes of the past season, they could prepare then for next year's business, so that men who own factories could know whose milk they wanted, and in every respect they would be able to get more milk from the same area—more milk from the same number of cows by a proper system of feeding; thus bringing all this knowledge right to your patron's home by holding dairy meetings when the factories are closed. I think that would include a whole year successfully, and at the end of one year you would want to solidify it. I have much pleasure in moving the adoption of the report.

Mr. DERBYSHIRE.—I have much pleasure, as a member of that Committee, in seconding the motion. It is something that will commend itself to this meeting.

A MEMBER.—Before adopting it I think we should change the place of meeting from Campbellford to Peterborough.

Mr. DERBYSHIRE.—I might say that the Committee in looking for a place as a centre for getting cheese makers together, and as Campbellford had offered $100 for this Convention to come there this year, it would only be fair to give them this meeting, as they are a central point for cheese makers to gather this spring. You have had the meeting here this time, and give Campbellford the meeting next March for instruction in cheese making.

Mr. MACPHERSON.—The report puts the work into thorough system. It gets down to the bottom of things and makes a beginning. Now, I don't think that any factory should object to paying $10, under the circumstances. It is worth hundreds of dollars to them. Why, I pay nearly $50 a factory on the average throughout the season. If it cost me a hundred I would not sacrifice the benefits I receive from the close inspection of each factory weekly, and seeing the great benefits accruing, I am strongly in favour of carrying it out. We see the benefits we have received from the slight inspections in the past. Let us get further down and get the area of these inspectors, so they can control their work. It is only in this way of co-operation by assisting the best factories of our land and encouraging the poor ones, raising them to the higher level of perfection, that we will succeed. It will be an individual benefit to each one, and this will be the starting point. Ten dollars is a picayune in comparison to the great benefits they will receive. But there is one question: How are we to apply and collect and enforce this payment of $10 by each factory?

Mr. DERBYSHIRE.—We have one meeting at Lancaster, and we intended throwing the responsibility on your shoulders. We thought that you would notify the factories and their patrons, and then we would see that they paid in their $10 there. And we come to Brockville and I take the responsibility of seeing that each man attends there. Then, Meyersburg, we will throw the responsibility on Mr. McCargar, and he will see the money is collected there; and Campbellford will be looked after in March. We calculate that in this way we will be able to collect the money, and put it on a permanent basis; and I am sure it will have the co-operation of everyone.

Mr. FIELDS.—I understood, and I thought well of it, that we were to have the services of the Guelph College to collect this money.

Mr. DERBYSHIRE.—Of course we needn't take up the time of this Association just now, but we can debate that later on. I think we ought to have the report from Professor Robertson, and we will take up the details later on when we have lots of time.

The PRESIDENT.—When it becomes known through the local papers, I don't think there will be any factories but will pay up.

A MEMBER.—It is a very long jump from Campbellford to Brockville. How about Belleville?

Mr. DERBYSHIRE.—We will discuss this later on.

Professor ROBERTSON.—Mr. President and gentlemen: I had intended delivering an address on cheese making, but I daresay that most of you have already read my views. I had these sheets printed and distributed last night so that cheese makers who were here could read them over and be prepared to ask some questions on them. But I find that the time of the Convention will be required for other subjects. Now I think this cheese-makers' Convention we propose to hold will give me the opportunity I have not now to discuss these things. I shall, however, have the full address I prepared to deliver put in the report of the Convention, so that those who get the report will have the whole thing as prepared by me on the theory of cheese making, and I think the cheese makers who can come to the meeting at Campbellford and Belleville, and come prepared to ask questions, will get more good.

In order to save time, the following papers and reports were presented and taken as read:

CHEESE INSPECTOR BISSELL'S REPORT.

I was appointed by you, at the meeting held last spring, cheese instructor for the eastern division, and served in that capacity twenty-five days, when I resigned the position to accept an offer from Messrs. Robertson and Clark to buy cheese for them. Mr. N. H. Fields was then appointed to take my place as instructor. Having served but a short period, I did not think it necessary for me to present a detailed report. In response to an invitation to be present and to make a few remarks, I am here to do what I can to make the meeting interesting and profitable to all who attend.

If dairying is to be the leading business of our province, and such is, without doubt, the case, everyone who is engaged in dairying should study his business and thoroughly understand it. If he does not he will be left behind in the great race for success and prosperity. Dairying cannot be profitable to the man who does not understand it in all its different workings. And the means of becoming posted on the subject are so accessible through agricultural papers, farmers' institutes and dairymen's conventions that there is no reasonable excuse for any man to plead ignorance to justify his failure in dairying.

It is an impossibility to make a fine quality of cheese from poor milk. A cheese of passable quality may be made occasionally, but a really first class cheese cannot be made from it. Now, how is this desired quality of milk to be obtained? Let me say that, in order to obtain this result, care should be taken first in selecting stock for dairy purposes. It is not my purpose to say what breed is best. Some farms demand one breed of cows, some another, and it is the dairyman's duty and to his interest to find out what breed can be kept on his farm with the best results and greatest profit to himself. What I wish to point out is, that whatever breed you fix upon from which to stock your dairy, select only such cows as are of a good milking strain, then breed only from a thoroughbred bull. It costs just as much if not more to keep and care for a cow that gives 2,000 lbs. of milk a year as it does to keep one that will give 4,000 lbs.; and a cow that only gives 2,000 lbs. cannot be kept at a profit to the farmer, but will run him in debt every year he keeps her.

The care of cows is of quite as much importance as the selecting, as no breed of cows, unless properly cared for, will be of profit to the farmer. Cows should come out of the stable in the spring in as good condition as when they went in for the winter, and in order to accomplish this they should be comfortably housed. The stables should be warm and well ventilated. Water should be provided for them in the stable, so that, in order to drink, they need not be turned out of a warm stable into the cold winds to which this country is subject. Pure water is, of course, necessary to producing good milk. I think I can safely say that fully one-tenth of the farmers spoil their milk by allowing the cows to drink impure water from stagnant pools. Let us have as pure water for our cows as we desire for ourselves. This can be most easily accomplished by means of a windmill to

force the water into an elevated tank from which it can be carried by pipes to a trough in front of the cows. This arrangement will make a great difference both in the quality and quantity of milk and the flesh of the animal as well.

In order to obtain the best results care should be exercised in feeding and selecting milk producing food. Every farmer should have a reserve supply of green food to feed during the dry season, then the flow of milk can be kept constant. This can be supplied by sowing corn to be fed in this way. I would advise cutting the corn twelve hours before it is to be fed, thus giving it time to wilt.

Especial care is needed by the cow just before and after calving in the spring. This is the time when the cow should have extra feed besides hay, in order to keep up the flow of milk before being turned out on the grass.

The spring is the time when dairymen should feed to get the best quality of milk to send to the factory. Great care should also be taken in the matter of cleanliness of the cows at this time. The milk is likely to be feverish and will become acid very quick unless great care is taken with it.

The cows in the spring, from being shut up all winter, are apt to be dirty, and care should be taken that the udder and teats are cleaned, either by brushing or washing off, before commencing to milk. Then the milk should be thoroughly strained as soon as milked. I prefer a strainer made of two or three thicknesses of cheese cloth either on a rack or pinned on to the can. After the milking is done and strained, the milk should be properly aired in the can by dipping with a dipper. If the milk is properly aired it takes away all disagreeable flavour from it and purifies it. This should be done through the whole season, morning and evening, and the result in the improved quality of the milk will fully repay the dairyman for the time it takes to do it.

It may seem to some needless to speak of the process of milking, but I can say from experience that this is the point where most dairymen are negligent. Milk is a sensitive article, and from its nature requires proper and careful treatment. This care should begin with the milking hour and end only when it is delivered at the factory. Cleanliness on the part of the milkers is absolutely necessary both in person and in the utensils for holding the milk. Cans, pails, strainers, etc., should be the perfection of cleanliness. The dairyman should oversee the milking and forbid any of the many dirty practices of milkers which are so common. No one should allow the dirty practice of wetting the cow's teats by dipping the fingers into the milk pail. And yet, I venture to say, this is done by half of the milkers of the country to-day. When the milking is entrusted entirely to hired help, whose interest ceases when the milking is done, is it to be wondered at that cheese is every fall thrown back upon the market which is not up to the standard.

Every dairyman must, of course, have a milk stand, which should be in a convenient place to the milkers and where no bad odours will be absorbed by the milk. But too often they are built only for convenience, without regard to the purity of the atmosphere that surrounds them. "Men do not gather figs off thistles," nor do factorymen get pure milk from cans which set all night on a milk stand that is attached to or built near a pig sty. This things must be stopped if Canadian cheese is to hold its well deserved reputation in foreign markets.

I feel that I ought not to close this paper without referring to the practice of skimming and adulterating milk. In performing my duties as inspector, I am sorry to say that I have detected some farmers who do such things. Words fail to express my contempt for the man who would stoop to so mean a practice. I would heartily approve of a law making it a criminal offence and punishable by fine and imprisonment, or both.

In preparing this paper I have intentionally made it short, so as not to trespass upon your time or patience. It may seem broken and disconnected, but if it awakens a deeper interest in dairying and furnishes any information to anyone, it will have accomplished my object. I will try to answer any questions you may wish to ask, and do my best to give you the information you desire.

CHEESE-MAKING.

The following paper on "Cheese-making" was presented by Mr. C. C. McDonald :

This being my subject, I think the first question to be considered is the instruction of patrons in regard to keeping their milk, and sending it in proper order to the factory to be made into cheese. Too much care cannot be taken, as we all know, in preparing milk for the cheese maker to handle, and I think as a rule patrons have been sadly neglected in regard to their instructions as how to keep their milk. They have been left too much to the instructions of the cheese makers who have served from one to two seasons as assistants, and who know literally nothing about the qualities of milk, except in this the Allan Grove Combination, where experts are kept continually on the road for the purpose of instructing both the cheese maker and patrons, if necessary. This, I think, is an excellent plan, as everything is not then left to the inexperienced cheese-maker. I will now introduce to you my system for handling milk, and manufacturing it into cheese. I hope, whether my paper meets with the approval of the Association or not, that it will be pulled to pieces, and sifted to see whether there is any good in it or not. There are gentlemen present that are doubly able to do it; gentlemen who have done a great work through the country in instructing young men how to make cheese. And I must say, we owe a very great tribute to Messrs. Bissell and Whitton for the vast amount of good they have done. We will suppose I am handling the milk of from thirty-five to forty dairies—say forty—twenty of which have taken every precaution to have the milk pure and uniform ; ten of which have paid very little attention to their milk, and ten that have never given their milk one thought. In my experience I have invariably found this to be the case ; if the milk comes in the morning at the temperature of 60° to 65° Fht., I apply steam and heat to 84°; and if it comes in at 70° to 75° I heat to 82°; and if it comes in at 80° I do not heat at all, but add from two to two and a half ounces rennet extract (according to strength) to thousand pounds milk, stirring milk very fast while adding the extract, and then stirring carefully for five minutes, and covering the vat with a linen cover, large enough to cover all parts of the vat, in order to keep the milk as near the temperature of setting as possible all through the working process of the rennet, which generally takes one hour, and sometimes an hour and a quarter, according to condition of milk. When the newly-formed curd will break freely over the finger, I maintain it is ready to be cut and to be worked, but the time should invariably be one hour. I cut with the perpendicular knife first, passing it gently through the curd, holding it as perpendicularly as possible, first lengthwise and then immediately after I pass it through crosswise. Immediately after this is completed I pass the horizontal knife lengthwise through the curd, cutting each particle of curd as nearly the same size as possible. Then the vat is ready for working. I stir for ten minutes very slowly to allow the surface of the curd to heat over, and the whey to separate a little before applying steam. Then apply steam very lightly at first, and stir very gently while curd is soft, so as not to break the particles of curd. Gradually increasing steam as the whey separates, I invariably take one hour to heat my vat to the desired temperature, which is never below nor above 98°, except in cases where I have taken in milk that will produce pin-hole curd, then I heat milk to 84°, regardless of what temperature it comes in at, and use enough rennet to thicken it in fifteen minutes and cut in one hour, heating curd to 100°, and the temperature is kept as near 100° as possible all through the whole process, never allowing it to run below 98°. In the hot season I stir for five minutes after cutting off steam to prevent curd sticking to bottom of vat. Wash down all particles of curd sticking to side of vat, and immediately draw whey off down to surface of curd, and hand-stir until all the curd is firm and the surface glossy, which takes generally thirty to forty minutes. Then I draw the remainder of the whey off, making a drain through the centre of the curd, so that the whey will pass off freely. Then hand stir until the curd is free from all whey that will drain off freely, or, in other words, until the curd has a firm feeling and will spring like rubber. Here the maker must exercise his own judgment, taking care not to expel too much moisture, which causes a dry hard cheese, and also, being careful to expel enough moisture. Neglect of this will cause a soft, weak cheese, very apt to leak. I

generally take about thirty minutes to hand stir curd before packing. If the milk is pure and sweet twice going over the curd, keeping it as firm as possible, will suffice; and if the milk is pretty ripe I go over it three or four times, taking every precaution to expel all surplus moisture before packing. Then pack thickly, on each side of the vat, in about equal quantities, tipping vat up and placing curd in the highest end to allow the curd to drain. This done, place the vat cover on the vat, and let it remain just one hour. Then cut curd with large knife, in pieces, about six inches wide, and turn the pieces upon their sides, in a manner that each piece will touch. Every fifteen minutes turn each piece on its opposite side, and in the meantime keep the temperature as near the standard as possible, until the curd is sufficiently mellow to readily take the salt, which generally requires three hours. Then grind and salt, and put to press immediately. I do not use the iron to test the development of the acid, although I believe the iron to be a true test. An experienced maker can make just as well without the aid of the iron as he can with, but it would be much safer for a maker with but two years or less experience to adopt the use of the iron throughout the season. I was glad to fall back on the aid of the iron last fall during the time of that dense smoke which prevailed in the eastern part of Ontario. I found it very difficult to smell anything but "smoke," and my taste was equally as bad. In the month of May I use 2 lbs. salt to 1,000 lbs. milk; in the month of June 2¼ lbs.; in July and August 2½ lbs.; and September and October 3 lbs. Higgins' Eureka salt is the best salt I ever used. It takes much longer time to disolve than any other salt that I ever used, and I prefer it to all other salts for manufacturing cheese for keeping purposes. I must also say a word in favour of Professor Arnold's rennet extract, as being more uniform in every respect than any other I ever used. It is stronger than any other extract that I know of, in short I feel perfectly safe when using it, and have never been deceived by it once. After the curd is all carefully hooped I place a round cloth, cut just to fit the top of hoop, and place the follower, each one fitting the hoop perfectly, and placing each hoop square and straight under the screw, and immediately begin to press, very lightly at first, but gradually increasing pressure every ten minutes for half an hour. I then leave them under pressure one hour, when I take them up and dress each one and turn them over and again put them to press. Great care should be taken in hooping curd and dressing cheese, when turning them in the press, so as to have cheese uniform in size and properly dressed, and give as tempting an appearance as possible in the curing room. After turning cheese in the press I increase the pressure every two hours until bed-time, and increase the pressure several times the next day. A man to be a successful cheese maker should not go "fishing or hunting," and should have a particular dislike to all "fast horses." During the forenoon I take cheese out of press, convey them to the curing room, and oil on the upper end only, and when the next day's cheese reaches the dry room these are turned and oiled on the other end, and so on through the whole season. If my cheese are in the factory fifteen days they are oiled fifteen times; during the hot weather I have always found it necessary to touch all cheese with oil every day they remain in the factory. In this way I never have a cheese that will crack open. I have often heard makers complaining about their cheese cracking open, but I have never had any trouble in this way. The oil is cheap and easily made, and will prevent the surface of the cheese cracking if properly applied. Cheese should be turned every morning, and thoroughly rubbed, to keep all mould off, and to give the cheese a glossy and smooth surface. A curing room should be kept as light as possible, and thoroughly ventilated. Flies will never trouble where the curing room is pure and free from foul air.

I always pay frequent visits to my cheese to see that no injury has been done by the assistant when turning, in the way of breaking the rind or side of cheese. In such case a small piece of bandage should be well oiled and placed over the break to prevent flies from doing their work.

I handle pin-hole curds much the same as any other, only keeping the temperature higher and allowing a longer time to mature. Heat will successfully remove all pin-holes, and there is no earthly reason why any maker of ordinary experience should not produce a close, first-class cheese out of pin-hole curd. I find it very little more trouble to work a pin-hole curd than any other. All cheese makers should urge upon their patrons to take every care of their milk, and insist in every instance upon having each patron's

milk well cared for, and brought pure and sweet to the factory. A little word of praise and encouragement to the patron who brings his milk to the factory in a proper condition never comes amiss. I think a patron should have praise, when he deserves it, in presence of those who do not deserve it, at the time same throwing out some suggestions to all under the sound of your voice in regard to the care of their milk. In extreme cases of tainted curd I have found it very beneficial to steam the curd by means of a steam-pipe, leaving the vat cover on to retain the steam in the vat as long as possible. I have poured steam into a tainted curd until the surface would have the appearance of butter. Then after breaking up again with the hands I would find that all pin-holes had disappeared. The steaming is done after grinding and before salting. Some may argue that steaming will make a dry cheese, but there is no danger of having a dry cheese if sufficient time is given the curd to mature after steaming. I have handled spongy curd in this way with success every time. The cheese cured down satisfactorily and was found to be equally as close as any in the factory. I maintain that any cheese maker having unlimited time, which he should have, need not fear pin-hole curd in the least. I hope the time is not far distant when we will be able to have all cheese in each factory in Ontario so uniform in quality that the shrewdest buyer will not be able to detect the slightest difference.

TESTING MILK AT FACTORIES.

The paper on this subject was prepared by Mr. J. A. Ruddick of Lancaster :

The contents of this paper are by no means to be considered an exhaustive treatise on the subject of testing milk. It is the intention rather to put before you a simple method which any one may put into practice, and which after some experience will enable him to arrive at very definite conclusions concerning the purity of a given sample of milk.

When selecting a method for the purpose of carrying out a scientific investigation, the utmost exactitude ought to be the only point aimed at, regardless of cost, time, or difficulty ; but for practical purposes the question of applicability and suitability cannot be left unconsidered. Cheese makers and others who may have occasion to test milk should be interested in finding out the best and most suitable means of enabling them to judge correctly the purity of any sample of milk they may have to handle.

The apparatus required to conduct the tests I am about to recommend is not at all extensive, and consists principally of a lactometer, a thermometer, a creamometer or per cent. glass, and as many test tubes as there will be samples of milk to test. To these might be added a box for holding the test tubes, which I shall explain later on.

A description of the lactometer is unnecessary, and all know that it is used to determine the specific gravity of milk. There are many different kinds, but the one most commonly used in this country is the per cent. or centigrade lactometer, the scale on it being divided into degrees from 0 to 100. When put into pure milk of a standard temperature the 100th gradation of the scale coincides with the surface level of the milk, and the zero mark reaches the same point when the instrument is tried in pure water of the same temperature. When it is put into a mixture of milk and water, therefore, it is obvious that the surface of the mixture will correspond with a point somewhere between the zero and 100 marks. The greater the amount of water present in the mixture the nearer will the surface level of the liquid approach the water limit or zero line of the scale, and the greater the quantity of milk in the mixture the less will the surface recede from the 100th or milk line of the scale. For example, if 10 per cent. of water has been added to the milk, the lactometer will sink in the fluid to 90. These lactometers are so constructed that the 100th mark corresponds with the surface level of milk or any liquid having a specific gravity of 1.029.

The creamometer or per cent. glass has been mentioned, because it is a very convenient vessel for holding the milk to be tested, and it will also be found useful to ascertain the exact per cent. of cream in any sample of milk when required.

The test tubes are necessary to hold a portion of every sample tested to allow the cream to rise.

In order to apply these principles to good advantage it is necessary to have a water-tight box for holding as many test tubes as will be required. This box is fitted with a moveable rack, consisting of a piece of thin board or tin, held in position near the top of the box. Holes the size of the tubes are made in it, through which they pass and rest on the bottom. A space must be left around the tubes for ice.

When a test is to be made, make preparations to test every can of milk that is delivered at the factory that day. First procure ice enough to keep the water with which the box must be filled at a temperature of 40° or 50°. Break the ice into pieces small enough to fit the box, and after the water is put in you are ready for the milk.

Take a sample of every can as the milk passes from the weigh can to the vat. Fill the per cent. glass with it; drop in the lactometer, and after it has become stationary, note the point of the scale at the surface and put it down opposite the name of the owner on a sheet of paper prepared for the purpose. Now use the thermometer, and when you get the temperature mark it down also. It must be remembered that the temperature has a very marked effect on the lactometer. For instance, in a sample of milk at a standard temperature of 60°, the instrument stands at 100°. Heat the milk to 80°, and the lactometer will at once sink to 90° or thereabout. Just about 1° of the lactometer for every 2° of temperature. The most exact way, perhaps, is to bring all samples to the same temperature, but there is not time to do so when testing in this manner.

When turning the milk out of the glass, secure a test tube full and put it away in the box. These tubes must be numbered so that it may be known to whom they belong at the end of the test. When this process has been repeated until all the milk is in, take a sample out of the vat and treat it in the same way. This will serve you for a standard by which to judge the others.

Having finished, lock up the box and wait for the cream to rise, which it will do very quickly at such a low temperature. The cream appears to rise more quickly when the temperature is falling than it does after it becomes stationary. This is owing, no doubt, to the fact that the fats are not as good conductors or contractors of cold as the other parts of milk. Usually three or four hours will suffice for all the cream to rise. When the division of cream from milk is shown by a clear and distinct line, it may reasonably be supposed that it has all risen. When you conclude that the time is up, proceed to measure the volume of cream on each sample with a rule and set the exact amount down with the other notes, each in its respective place.

After you have measured all the cream it will be much easier to judge of the purity of the different samples by comparing the different records one with another than it would be if you had only one at a time. The different lots have all been subjected to the same treatment under the same conditions, and any variations that may appear must be owing to some fault in the composition of the milk. Besides, there is the sample out of the vat for a standard. Look over the figures, and if you find in any case that the lactometer sank too low, see what amount of cream the same sample gave. If there is an unusually large measurement of cream, this will very likely be the cause of the low specific gravity, unless it is considerable, because cream being so much lighter than milk, the more of it there is present the lower will be the specific gravity. On the other hand, if the amount of cream is small, it may reasonably be assumed that the milk has been watered. In short, watered milk is always of a low specific gravity and lacking the proper amount of cream; and milk that has been skimmed, while it will not throw up an average volume of cream, is always found to have a higher specific gravity than whole milk.

If there are any samples short in cream the milk must be very carefully examined, for there are not a few causes that prevent the cream from rising to the top, although there may be plenty of it present. If the milk is even slightly sour no cream will rise. If this is the case it will be easily ascertained by tasting. A little practice, however, will enable the operators to know or judge pretty correctly by the mere appearance of the milk whether all the cream has risen or not. The operator must not expect to find all pure milk exactly alike. On the contrary, there will be considerable variation. It will not do to jump at conclusions in the matter, but if you find any that you are suspicious

of in any respect examine carefully all the conditions, and unless the variation be considerable it is not well to conclude on the strength of one test that there has been any wrong-doing. I would add that if you come across any that continue to be below the standard, after several tests, go to the farm and see the cows milked and get a good average sample after the milking is over. This must be subjected to exactly the same treatment as in the other tests and the result cannot fail to inform you as to the true state of affairs; it will also be the best of evidence if you have recourse to law.

There are other methods of testing which I might dwell on if time would permit, but I have given you what I have found after five years of trial to be the best plan for testing at factories. The simplicity, short length of time occupied by the operation, and the degree of accuracy, all combine to recommend it.

I would like to say a few words regarding the ether test and the lactoscopes. I have used the ether test a little for three or four years with some degree of success. I find it very good in cases where skimming is suspected, and I use it in this way: Take off what cream has risen and try the milk that is left with the ether. There is generally a very small percentage of oil or fat found in all skimmed milk when treated in this way, and it often happens that there is quite a large percentage found where the volume of cream thrown up was so small as to indicate skimming. But by combining the two results we get a good average test. It is always desirable to procure all the evidence possible, and when the results of two or more different tests go to prove the same thing very definite conclusions may be arrived at.

It has long been thought possible that by measuring the degree of opacity one might be able to judge correctly as to the percentage of fat in milk, and instruments termed lactoscopes or optical tests have been constructed for the purpose. Although I have never made much use of these instruments, I find from the experience of others that they have failed to give general satisfaction, inasmuch as the principle on which they are based is wrong. The opacity of milk does not depend solely upon the presence of the fat globules, the serum in which the latter are floating being itself opaque, and most probably varying in degree in different samples of milk. Moreover, it is not the percentage of fat which causes a more or less high degree of opacity, but the number of fat globules into which the fat is subdivided. It is an established fact that the fat globules in milk, so far from being all the same size, vary considerably, and that the different sizes are present in rather variable proportions in different samples of milk. Of two samples of milk containing equal percentages of fat, the one in which the larger number of smaller globules is present would appear more opaque—that is, richer when examined by a lactoscope—than the other sample, although the latter contains the same amount of fat, but in a smaller number of larger sized globules. Other circumstances—for instance, the strength and kind of light in which the examination is made, and the eye-sight of the observer—also influence the optical tests to a considerable degree and leave much doubt with regard to the accuracy of the results obtained. The use of lactoscopes cannot, therefore, be very highly recommended when more than a mere superficial examination is desired.

A great deal might be said regarding the manner of dealing with those who are found delivering milk that has been tampered with. Under existing laws it is very hard to obtain a conviction in the courts, and the fear of incurring costs and failing to establish a clear case prevents many a factoryman from proceeding against those who are in his own mind surely guilty of the crime of robbing their neighbors and all those who co-operate with them in supporting a factory. The man who offers for sale a tub of butter with a stone in the centre of it is quickly brought to justice, and why should not the man who waters or skims his milk be treated likewise? However, it is the duty of factorymen to notify immediately all those parties who are found sending milk in any way deficient. State the facts of the case plainly and insist on an explanation. There is just a possibility that the milk may be tampered with unknown to the owner, but these cases are rare, and when you have a conversation with any of these people you can generally, by exercising a little tact, get at the real facts of the case, though you may not get a straight confession. If any man continues to send milk not up to standard and there cannot be got sufficient evidence to convict in court, expel him from the factory.

In conclusion, I would say that I hope this question will be given a little more attention in the future. There is much need for more vigorous action on the part of all interested, if the evil which gives rise to the whole question is to be put down. What is the use for us, as cheese makers, striving to reach perfection in the art if the material which is supplied us is not pure and of the best possible quality.

There are many in this audience who are far more capable of dealing with the subject than I am, and I know that this imperfect paper has left plenty of room for a good discussion, which will be of much more benefit to this meeting than any feeble effort of mine can possibly be.

HEREDITY IN THE DAIRY COW.

On this subject Mr. Hoard spoke as follows: The topic I will invite your attention to may be termed a foundation stone (if it is proper to call a cow a stone, and cows are stoned altogether too much). But it may properly be termed the foundation of the dairy successes of our country; and when I say our country I mean all included in this wide America. We are all interested alike on this question. Our insight and discernment is all prompted by the same consideration. I have for a long time been at work on this study. It has been the absorbing study of my life for the past twenty years. Years ago, when even a boy, I became impressed with the idea that there was a very great specific difference in the characteristics of cows; I saw that there was the same difference that there was in horses; I saw that there was the same difference that there is in dogs, and I made up my mind that the bottom of this difference lay in heredity. Now, the fault I have to find with the general state of knowledge among the men who produce milk is the lack of a clear understanding of what is a dairy cow and what is not; what does belong to the dairy cow and what does not. And yet we have scattered over Canada thousands and thousands of men who are keeping these animals year after year for the sake of profit, and at the same time a perverse notion cuts across the horizon of their eyesight with the effect of diminishing their profits, of destroying their effectiveness and making the dairy business a matter of hard enforced success. And it seems there was a wonderful difference in the successes of different men with cows. When I studied to the bottom of it I found that these men had different ideas and different judgment as to the cow. Now, the thing is, what governs men in their successes. For instance, what sort of a man would he be who built a sewing machine with a reaping machine ideal in his head? No one would buy the work off his hands and no success would attend his efforts. What sort of a man would that be that would undertake to build a race-horse with a Clydesdale in his mind? Now, I think very likely there are such men here, and for a moment I want to speak on the question of heredity and show you how heredity and the specific dairy temperament produces a certain specific outline and form, and the outcome will be to see if we can't arrive at some principle where we can judge dairy cattle—whereby I can breed a cow and breed her successfully; whereby I can select the right kind of a sire with a proper sort of form, and whereby I can judge these things intelligently and as good as any one can from sight. That is the foundation of this talk. (Hear, hear.) Now then, my friends, the question of heredity steps in clearly. Have you ever stopped and thought what a marvellous thing it is? Take dogs, for instance. Here is a bird dog and a fox hound; both possess the power of scent to a marvellous degree of accuracy. But here heredity has stepped in and shaped the consciousness and purposes of these dogs, that with equal powers of scent each has no knowledge of the other's purposes. A fox hound will cross a chicken's track or a quail's or snipe's or woodcock's track a thousand times and never know it, and not from a lack of scent, but from a lack of trained and bred scent. The power of heredity—the moment he strikes a fox track, up goes his head. Eureka! I have found it. Found what? Found that for which I was bred to find. The chicken dog will pass over a fox track a thousand times and never know it, but the moment he strikes the track of a quail immediately his tail is as stiff as a kitchen poker and every single muscle is alert with this vivified sense of heredity,

and he has a direct purpose. He says, in posture at least, I have found it. So heredity steps in here. Now, I venture to say that in the whole of Peterborough County there is not a boy who would go out hunting foxes or chickens with a bull-dog. The power of heredity, my friends, furnishes us, in the history of the United States during war time, with a wonderful example. Your humble servant was a participant in the famous battle of Cedar Creek, known as Sheridan's Ride. Sheridan was twenty miles away, and, mounting a horse, he rode that distance without once letting up, and came down the heights at a tremendous pace at the last end of the twenty miles. If you could have seen that and felt that the fate of the battle depended upon—what? Upon the fact that some man had been wise enough to breed a horse for a purpose. (Hear, hear.) Why, supposing Sheridan had mounted a Clydesdale, where in God's name would he have been? Suppose he had mounted a Percheron? And your humble servant had occasion to thank God that day that some man had bred to a purpose. I had the good fortune to secure a fresh young mare, and afterwards lost my way. A rebel body stopped me and said, Surrender! But I was well mounted and I thought it would be a glowing shame for a man astride a 2,000 year bred to surrender; so I bent over and said to that little mare, let's see if we can get out of here. And for two miles down that turnpike the rebel lieutenant, who was about as well mounted as myself—the pace was too killing for the men—for two miles we raced, and I could feel the little mare gradually widening the gap. Fortunately, we were nearing our own lines, and seeing the chase hopeless the lieutenant gave up and turned back. And in the fortune of war it afterwards became my honor to form his acquaintance. Sheridan was successful and 10,000 prisoners were captured. I made the acquaintance of the young lieutenant, and he said to me: "I had the all-firedest race to-day I ever had; he was mounted to go for God's sake." Now, my friends, this little affair was stamped on my mind with a vividness it has never lost. The value of specific training and specific breeding in a specific line for specific purposes (hear, hear), and if I could take hold of the dairy thought of Canada and America as it lies sequestered and turn their attention to these types of animals and prove to them, and take hold of their conscience and conviction, that a very large proportion of the success they hope to have in this world will depend upon the adaptability of the machinery they use for a specific purpose, that would do more good than anything else I could ever do. Now, I have spoken for a moment on this question, and I want to say that the dairy or milk function in cows is just as much a subject of heredity as is speed or training in horses, or scent in dogs, or any other function in beast or man. And in studying these questions we see what breeding has done for the coal miner of England. The Cornishman has a peculiarly shaped body, with long arms, because for a century or more he has been a coal miner, and he has adapted himself to that environment. These functions are the subject of temperament. What is temperament? I stand before you to-day a man of a certain complexion, a certain build and a certain conformation of my bodily machinery. Is it a matter of simple accident? No, it is a matter of temperament. Why am I not fleshy and corpulent? Why, you could as well fat a fanning mill by putting oats through it; (laughter) as well do that as try to put flesh on my bones or make me a corpulent man. But so long as Hoard remain himself he will be just the build and character of the man he is, both mentally and physically, because he belongs to a certain temperament. What is it? A nervous temperament. What does it do? It makes a man of strong bone, of toughness and endurance, of spare habit, a man not inclined to obesity, of lean, compact muscle, and, as a rule, of long fingers. Now, you will find men of these temperaments dropping just as naturally into certain functions of life. By the way, did you ever see a violin or piano player in your life with a short, thick, fat hand? No. That man is the subject of a certain temperament—there are things he can do well and things he cannot. Now, we divide this question on two lines—the nervous and its combinations, and the lymphatic and its combinations. The lymphatic is a temperament which naturally pushes its possessor towards the growth of flesh or fat. Our important growth of hogs to-day is an excellent example of that. Now the Suffolk pig is a remarkable expression of the lymphatic temperament. The long-snouted razor-back of North Carolina is a good example of the opposite. There they test the value of a hog in this way: Take him by the ears and hold him up, and if his head and snout balance the rest of his body he is a good pig. (Laughter.) Now a friend

wrote me the other day from North Carolina and told me a story. He said that a friend of his took a lot of these Poland China pigs to the fair last fall. He noticed all the farmers passed by his plump hogs and went over to a pen of razor-backs. And he said to a stranger, "You don't seem to appreciate these nice hogs of mine." The man looked at them and said, "No, my friend; we don't want that kind. We want the kind that can outrun a nigger." (Laughter.) Now the old stranger was sensible. He knew what he wanted. You have men who own cows—do they know what they want? Now a moment on this question of the dairy temperament. When we are breeding for beef we are constantly combining male and female to the reinforcement of the lymphatic temperament. Keep these words in your minds. For instance, we unite one and two that three may be a fraction greater in one than the two were singly. So we should breed that the heifer may be a little better than her mother by the favourable union with her father. And, as a consequence, all intelligent dairy breeders should have that purpose in view—the heifer to be better than her mother. Now if we breed on that line we must breed towards the extinguishment of the lymphatic temperament, the enhancement of the nervous or dairy temperament, and the enlargement of the dairy functions. In my investigations in this matter, I have had to strike out some new ground for myself. I could not find advances that suited me. I found that as I went further and further and struck the most advanced types of dairy cattle, you had certain characteristics of mind, of body, of motion, of disposition and all those thousand other absolute attributes among men and animals. The dairy cow is as naturally as can be a cow of a lean habit. That cow is of a very active brain, and in a short time we will proceed to dress it down. I find in this matter that the dairy temperament is based upon the nervous temperament. Now by nervous I don't mean nerveless. People speak of persons being nervous when they are nerveless. They have no nerve power. And a nervy man is a man who controls himself, and he is staple and steadfast by reason of his nerve power, and can act quickly, strongly at any time. So the nervous temperament is not an excitable one, but one that can be made excitable if it becomes necessary. Now then, the dairy cattle are tested, as a rule, by that quality of mind and, therefore, we take the highest expression of these breeds. In Jersey we find cows which are known for their quick and vivacious nature. In the Guernsey less, but still more than others. Now, gentlemen, I have been forced to these conclusions by study, by the aid of all the intelligence I could get. I have been forced to bring this conclusion here—that butter fat is essentially the product of nervous energy. That is how you get it in a large degree from cattle correspondingly to the large development of nervous power in them. The nervous system is peculiarly adapted by nature to the production of butter fat. Let me trace it for a moment. [Turning to print of cattle on the wall.] Here is the great gland. It is a wonderful piece of machinery, sensitive marvellously to every touch and every hurt. This mammery gland is united with the uterus by a marvellous combination of nerves that enwrap it completely. Now that shows you, my friends, that the question of giving milk is a maternal question, a question of maternity. You take the place of the calf, and the more wisely you do it the better for yourself. The plexus unites the uterus, then passes to the spine and then through it to the brain. Now when milk fever ensues it is a nervous disease, brought about by some shock to the nervous equilibrium, and is first found to take place in the uterus, usually occurring from one to four days after calving. The moment that that sets in this nervous telegraph says stop! and instantly the whole milk secretion is stopped. If it is not checked the inflammation travels along and strikes the spine at the lumbar region. Instantly the cow drops. Then the inflammation travels along further still, enveloping the spine, which is a continuation of the brain, and by-and-by strikes the brain, and the poor cow dies a victim to her maternity and, like as not, to your and my own carelessness. (Hear, hear.) Now then, we see in that little matter how this nervous machinery is involved in the production of milk and butter. Now butter fat is, you see, first produced by employment of the powerful nervous machinery, and second, by nerve supporting food. It has been found by experiment that we need to have a certain amount of albumen, of nerve-producing food with starch or heat-producing food. We must keep up the tone of the system. Butter is largely produced from albumenoids. Then there are two principles—first, the machinery, then the character of the food. Then, when butter is produced, where does it

go? It is almost entirely absorbed by the brain and nervous system. Where people to-day, who are without physicians, wish to give patients who are low with consumption or any prostration by nervous disease, they feed them sweet cream. Here are three principles. First, the machinery; second, the character of the food; third, the use of it after it is produced by digestion. Now here, in that last statement, constitutes the profoundest indictment against the use of substitute butter. When men tell you that oleomargarine is as good as natural butter, they are but speaking in ignorance. For if there is one improvement yet on Nature they are the first that have found it out. (Hear, hear.) This is a fact, and so clearly has it became known in France that to-day the hospitals there have forbidden the use of substitute butter, because they discovered the depressing effect it had upon their patients and how much the genuine article is needed in every day work to keep up the tone of the system. Without it you go to pieces instantly. We are good for nothing, and, as a consequence, we have to-day in cheese and milk the most wonderful combination of food known, which supports the brain, the muscle, the nerve and the flesh. Now, I wish to trace for a few minutes some of these things. When we breed a dairy cow it is our bounden duty every time to do all we possibly can to enhance the character of that temperament so that the heifer shall be a little larger in her functions than her mother. Now we make foolish mistakes in the selection of their sires, for they are too often taken with a round, plump outline rather than with the distinctive indication of dairy functions and dairy competency. You go to a fair and what sort of Holstein bull will get the prize? Why, the beefiest animal there. And when men buy sires I have been struck by the fact that these men seem to lose all judgment from a dairy standpoint, and, as a consequence, this kind of judgment has given you in Canada a cow that, on the average, gives you only 2,700 pounds of milk. Here they are, the foremost farmers of the country, breeding these cows without judgment, without understanding. We have here before us, for instance, an imported Hereford cow, a very fine type of the beef temperament. I want to call your attention to the fact that so strongly developed is she here that there is simply no indication of maternity about her. What is she? She is a bullock of the feminine gender. (Laughter.) Now you are confounded, my friends; you have come to the parting of the roads, a division on the highway. The more interested you are in dairying the more lost you are how to breed a heifer on the right road. The old opinion of the farmer, that he must make a little butter and a little this and a little that as the best thing for profit, leads him to do business with cows with these ideas bred in him, and, as a consequence, he cannot breed so as to have the males fine beef and the females fine cows. You notice here the straight line on the back, the heavy shoulders, the protruding ham, the low, thick quarter, the broad loin here in the wide spring of the ribs from the spine. Now this is a beef outline, and the reasons are apparent everywhere. The ribs should spring this way and the ham this way, because it is the most profitable portion of the animal. The model should be broad tip and close ribbed. But what is this animal? She is a miser. She is an expression of miserly habit. She never gives up until you have laid her on the block. Here [pointing to print] is an expression of maternity. She gives continually to those who ask. (Applause.) Now we notice this contour. We want to see; for these are photographs and faithfully reproduced. These are Holstein cows. I had the pleasure of giving this cow the first premium at the Iowa fair, and when I gave it to her I did so by sound judgment. She was a cow of peculiarly strong, bony shape. There were a lot of men grouped about, and they said, "Well, that man's a fool." I never disputed that (laughter), but I was not a fool where they took me to be. It was the implication of their judgment they complained of, and they said, "That man's a fool; why didn't he give it to that fine small cow over there which weighs 1,500." Finally, I said, "Gentlemen, this cow is in the test." A great many cows had come to this test, which was to occupy two days. This cow was in the test. "Something I am going to say I never said before, but I'll stake my judgment on this cow," and that judgment was based on this theory. I staked my judgment on the way she comes out of that test. The test was declared next day, and my cow walked over the heads of the whole of them. (Hear, hear.) She could not escape winning. Now, I want to trace you some of her points, and the physiological definition or rather significance of these points. First, note here the peculiar formation

of her head. The dairy cow should have a wide muzzle, because she is a large eater for a number of years. Her life is not three years or two years, but she is to last eight years. Note the clean nasal reach, high and prominent. The wide nostril, the evidence therein of a large breathing power. She must vitalize her blood, for her milk comes from her blood, and she must be a cow of good strong breathing capacity. Note the peculiar fulness of the eye and its peculiar formation. You have a good full eye here (in the Jersey), but, as a rule, the eye brow is heavier, and while it may be full in high bred beef animals, it is clean and neat. Well, it is not as delicate in dairy cattle. Now, with this cow you have a full eye. I want first a very powerful brain. It is the seat of nervous energy, it is the foundation of the man and the cow; so I want a strong brain. When I rode that mare she only weighed 850 lbs., but her brain weighed over ten tons (laughter); that is, she had more nervous power and force than ten tons of ordinary horse flesh. Now, this cow has a strong brain. I look first for these things. All of us commence to judge a cow at the head, and I am satisfied there first; and if it is wrong there I rarely go further. I look to see a cow high from the eye to the bowl. I look to see her full here, well turned with a thin delicate ear, and not averse to having it fairly well lined with hair, but I don't want to see too much, for it indicates a grossness of build sometimes. But the first thing I do in judging a cow is to put my hand at the point of the spine as it enters the head, and I examine that with great care, if it is joined to the head strongly, and that there is a strong osseus development; and then I pass my hand along the spine and examine it with great care. I want to see it rise full and strong through the neck. I want a strong spinal formation in a cow, and raised about half an inch above her shoulders. Now you notice here the sharp shoulder of this cow. The formation of the shoulder is one indication of the temperament, and you judge a cow by this. The pitch of a dairy cow's shoulder is like that of a trotting horse. Did you ever think why a trotting horse should have a retreating shoulder? It has a retreating shoulder, the withers set far back towards the hollow of the back. Why is that? In order that the horse may have free motion of his forward legs. There you have in the formation of the shoulder the old principle that a machine must be built according to its purposes. Now, the pitch of the shoulder in the dairy cow is much the same as of the trotting horse. Passing the shoulders you come to the ribs. Now, the ribs in a dairy cow spring out both ways. It is a shelving loin, not a ribbing string with a square loin. The backbone should be high, strong and full. The whole model of the beast should indicate openness and relaxation, and that is essential, and I speak to-day concerning the milk-giving functions. That relaxed expression is essential to the milk-giving functions. Now then you ask why do you warm water? Why, gentlemen, there is not a woman—there is not a man in this room who has a wife—who can't tell why warm milk is an essential when the mother is giving milk. Not a boy in this room but his mother can tell him that. The very fact is that every mother, when she is nursing her baby, drinks warm drinks in order that she may have plenty of nurse for her child, and, gentlemen, cold exposure and cold drink shrink it in the mother. The first point I gained from my own wife. She was nursing my eldest boy. We were driving along the road on a cold day and she took a chill, and she said to me, "I am so sorry that I took this chill for my boy's sake. It will lessen his nurse." So I have laid it by, and that is the secret of warm water for dairy cattle. You come now in the formation of the cow to the pelvic arch. Many farmers are demanding straight back cows. If they were physiologists they wouldn't do it. Now that cow didn't have a straight back. The reason she should have a strong pelvic arch is because here are the organs of maternity and there is evidence by a wide, strong, roomy pelvis. And as a consequence it is a valuable sign in a cow. This Jersey cow was very weak here. I prophesied she would break down in her maternity, and she did so at her third calf. The machinery was not right. The pelvic arch should rise good and strong. You see it does in this Guernsey cow selected, a cow of wonderful power—she is a marvellous animal. Another thing. You notice here that the breast comes out full and plump and strong. With the cow here you have a retreating breast. As you pass your hand in judging the dairy cow there are some points I would like to direct your attention to. Stand behind the cow and see she is wide in the pelvis. See that these points are fairly wide apart, so that she has a strong arched

pelvis. As you pass down from the uterus you find there what is called the twist. Now this cow will have a close twist. Take these hams right here and put your hand up and down them. The partition, the junction of the muscles—the two longitudinal muscles lay longwise. Now in that cow they will be cross-tied and filled and strong, and you can't find the partition scarcely. In a dairy cow you will find them clean and open, and it is a good sign to find the partition of the muscles open and free, showing that the cow has a relaxed condition of temperament and body. Now you will notice that this cow has a high quarter and incurving ham. She has a thin flank. This cow has a deep thick flank. Right here is a little enlargement of the muscle, called by some the butter gland. I have data covering a thousand cows on this subject. As you pass your hand over it you will feel it. Go over your entire herds when you get home and feel with your hand or your finger—it is just as good a sign in bulls as cows. It is called the butter gland, and by some the flank gland, but it is an indication of the peculiar muscular construction of an animal favorable to butter production, and it is a very good sign to carry in your mind. The construction of the udder is a very excellent thing to think of. You can buy the cow first, and then, gentlemen, it is in your own hands to study. Now then a gargetty udder and usually one that is thick and fleshy. A Jersey is more liable to have it than a Holstein. They are very sensitive, and as a consequence any injury on the Jersey's udder will often produce garget when it would pass off on the Holstein. It is so with all cattle strong in the butter temperament. Here is a good thing. Take the highest point of the udder in the rear, lay a line across the cow, and the length of that line will give you a pretty good idea of the assertion of the udder over the cow—the line of absorption against the body. Now if you see a cow that drops freely here and the udder hangs from the body or projects or hangs up here, it has about as much swing as the scrotum of a bull. Now this is the first that I take. I look to have an udder that is extending forward on the abdomen. I want to speak a word now as to the constitution in animals, and I will give you what I think is a very useful hint. This one word constitution—you hear hundreds of farmers say I want a cow that is hardy. They make a bad use of the word hardy. It would be all right if their idea of hardiness was a correct one, but they mean a cow that is hardly like a steer. Now, gentlemen, you cannot expect a cow to do for you a large service at the milk pail, as a mother, and you must always commence the study of a cow from the standpoint of maternity. You can't expect her to expend her constitution in that way and at the same time wrestle for her living. (Laughter.) Nor can you expect that cow to be hardy to the extent of profit to you. She will not bear exposure. No mother can bear exposure. You know that. The very fountain of maternity forbids that. Therefore, a cow must be hearty, but it must be in the line of her efforts and not outside of it. What do I mean by constitution? The ability to stand the business of large milk production. I don't ask my cow to do the work for me, but give me the cow that can feed largely and produce largely of butter and cheese and you have a cow, if she can stand it for eight or ten years, which has a wonderful constitution. Now that is the true meaning of constitution in cows. I want to give you a very good way of judging it. Put your hand under the belly of the cow right at the navel, and examine her there in connection with deep lungs. And put your hand under the navel, and if the muscles of the abdomen incline strongly to the navel so that you see she has a powerful abdomen with strong muscular development of the abdomen, you may set her down as a cow with strong vital endurance. What is constitution? It is something born in a man and animal. It can't be fed or trained into them, and it can only be impaired by old age or ill-usage. I first learned of this from an army surgeon. He was examining recruits, and I saw him reject a young man with strong form and square shoulders. "Why," I said, "that looks preposterous. He looks like an exceedingly healthy young man." "Yes," he says, "but that man won't go through the exposures and hardships he will meet with as a soldier before he will break down." "Why, how's that? What is the meaning of it, doctor?" "Well," he says, "constitution is a thing which is born in a man, given him by his mother. The mother supports the offspring or fœtus through this arrangement here, the umbilical cord, the vehicular organs. Now the whole power of support goes through these organs. Now, if the mother has supported that fœtus or offspring weakly, there will be a flabby, loose condition of the muscular

arrangement here at the abdomen. And so you know that is the reason of the old saying, "A man is a tough man who has a stout belly." (Laughter.) Well, my friends, old sayings are often founded on deep wisdom, and it is a good thing to know the wherefore of things. I said, "Doctor, how does this apply to animals?" He said, "Absolutely, as far as I know of the horse." I took it up with cows. I have special data on this point covering over 3,000 cases, and I have found it to be a wonderfully excellent indication of constitution. Now we have gone over some of these outlines of the dairy cow, the value of heredity, the formation and form of the dairy cow. We have shown you some of the reasons—physiological reasons—for these things. Now, gentlemen, no one sign will do to judge a cow by. The escutcheon is as much a marvel to me as it ever was. I was never able to judge by it. A great many men rely upon it. I always like to see it, but I never judged a cow by it yet, and I have been put to pretty severe test in many a case. Said Mr. Maxwell to me (who was killed at the Wallworth county fair last year) said he to me, "I wanted you to come over to see my cows and you didn't do it yet. Now," he says, "I propose to have you tell me which is the best butter cow in my herd." "Well," I said, "I'll do it; I'll conscientiously undertake to do what I can, but I may be clear off." There were nine cows in the field. He says, pick out the best butter and dairy cow. So I went down to them, and with the addition of feeling the animals—and here is another thing I want to say, a man should always put his hands on the animal -- I said, "Here is a cow I would give you $300 for quicker than I would $100 for the others." He said, "What do you see about her? She is not the best looking cow here." "All very true," I said, "but there are some things I can tell you, and there are other things that come to a man by his study and use he can't describe. No man could tell you; I could not tell you how to make a tone on the fiddle. I can try and make you a tone, but no man can describe it. Nor can you describe a touch. You can take certain outlying principles and see where they lead to." He said, "You have struck it. That cow made me $2\frac{7}{8}$ pounds of butter to-day, and she will make from double to three times as much butter as any other." Then he asked me to point out these outlines. I placed great stress on the construction of the spine, the indication of the nervous power and energy of this animal, and, gentlemen, if you will do that and breed towards that end you will have done a great deal to put in your pastures and stables machines that will most abundantly reward your efforts. (Applause.)

Mr. HINMAN—You dropped one remark I would like to have you answer. You spoke of judging these cows at a fair. Were you the only judge?

Mr. HOARD—Yes, the only judge.

Mr. HINMAN—It is getting to be an important question as regards paying a little more and getting the best judges for fairs.

Mr. PETERS—I was going to ask if you didn't think when the cow was growing that these qualities could be increased in her as she grows.

Mr. HOARD—Yes, they can be increased or decreased. The wise handling of a heifer has a most important influence. I took a Jersey heifer, a thoroughbred—I have her sister from the same sire before her and another sister after her, both splendid cows, capable of making 350 pounds of butter a year; I took that heifer and absolutely ruined her. I sacrificed her to be able to say that I know a heifer can be destroyed. I commenced when she was a calf and fed her on skim milk and grew her in that way, and I kept her at carboniferous food, pushing her towards the development of fat; I bred her along until she was 21 months old, which was six months too late. I would breed from one year to 14 months so as to start maternity. I bred her to 21 months, and when she calved she was not worth ten cents as a cow.

THE VALUE OE MANURES.

Prof. ROBERTS, Cornell University, being called upon, said: This is putting me in a hard place, after you have heard all the good things, to ask me to finish up. Now, Mr. Hoard has explained most admirably how to find out what you want and then get it, and I want to enforce upon you this idea, that if you want such a cow as these pictures represent at all, you want her badly. There is no success unless you push on with the determination if you make a mistake to back up and start again; that is the way Mr. Hoard has succeeded; that is the only way we can get along. He has shown you how to get a cow, but the cow is not worth anything unless she has an abundance of rich food. She must feed in abundance. I used to carry two apples with me once in a while—one a great luscious apple that had been properly kept and properly ripened, and it would just make a darkey laugh; and the other was one of these knotty kind that you can taste in your palate for a day. What was the difference? Quality, simply. So we must have a goop plant, as he who raises good plants can raise good animals. (Hear, hear.) But they both must be fed; and we have got to use our brain as well as our muscle. Human muscle is the most expensive physical force we can get. Now, I want to warn you not to travel the road we have travelled—to become robbers of the soil. How shall we get these little elements that combine together to sustain life and make us wealthy? We want first a little weak plant on the rocks to prepare the way for a better plant, then an animal to eat the plant, and then the fertility—the food, the animal, the eating, the plant. There is a little ring. You sooner or later get to the end. Now, starting at that point, I want to branch off. We find even now men putting $40,000 in a business that won't stand it. Here and there we find a farm that has more fertility in it already than is necessary. How shall we get it—how shall we utilize it? We can just as well take some of these elements out of the soil and sell them to some one; that is what our fathers have been doing, and they have reared these great states and built roads; they took it out of the soil. They did a noble work; it is time we stopped it. Then we may even take this away and put it where it is necessary and not return it. How shall we learn to so utilize the hoe and plow so as to give up this? When you have tilled a piece of land until it is first-rate, just go on tilling more; then your horses are in the best employment you could put them to. Put on three or four or six horses. Every time a horse treads on the soil what does it do? He grinds or compacts the soil. Now, when you go home, get the area of a horse's foot, multiply it by four, and then by how many times he steps on an acre; then get the horse's weight, and you get how much pressure he puts on an acre. Now, when I get that soil fixed I'll tell you how I want it, and I have studied it carefully. When I push a spade into it, it goes in with some difficulty, but when I lift the soil up—that is of the lower strata—it all falls to pieces. It is all ground up and piled together, so that capillary action will attract or repulse. Someone has said water will always run down hill. But how did it get up hill? More water in dry months comes from below than above, and the plants would all wither if it was not for the water from below. Water does run up hill, because it is running both ways towards the equator and the pole. It will run up hill as well as down. Then get your soil so that the water will run up hill, and then keep the surface of the soil so close that when it gets within an inch or two of the top it can't get up any further. Next, seed the clover plant down; it will go down 40 or 50 inches without difficulty. Sow it with clover, and then climb on the fence and watch it pop up. Now, the third thing—first, culture; second, by getting a plant that will go down deep. Why, at the University we took the second growth of clover and found it made 3,295 pounds of second growth, air dried clover, containing nine per cent. of water and roots. Why, the best part of our plants is below—4,983 pounds or about $18 worth of plant-food per acre below the surface. Now, this question of the fertility of the soil is *the* question. You all know that, and here I may say remember always when you are feeding a cow or any other animal in your barn to feed her judiciously, and to save all the manure, for half the cost of that food—suppose it is 12 cents a day or 15 cents—half of the value of that food every time is found in the gutter—in the manure.

Mr. HOARD.—Explain how do you make that out.

Prof. ROBERTS.—We feed a cow so many pounds. We take two substances, hay and bran, we analyze it and find that they contain of nitrogen seventeen per cent., phosphoric acid seven per cent., and potash four per cent. We say a ton of hay has so much of these ingredients. The cow in eating burns up or does away with the root fibre, but the nitrogen, potash and phosphoric acid pass off, so that you feed that cow, and she will take out twenty per cent. of the value of the food fed her, as a manure. Cotton seed meal is worth $25 per ton to spread on the land. Feed it to the cow she will tone it twenty per cent., and you will have eighty per cent. for the land. Twenty per cent. for a milch cow. A growing animal takes out ten per cent., a fattening animal eight per cent., and a steer animal, not a calf, takes out nothing. What does the cow do with that. She builds up muscle to-day with it, to-morrow it is thrown off.

A MEMBER.—Isn't there some thrown off in respiration?

Prof. ROBERTS.—No; not any—at least no perceptible amount. Now this thing of keeping the soil fertile, how are we to do it? I'll tell you two ways—first, better culture; second, by putting your plants down carefully and bringing them up. Third, by feeding your animals well and saving the manure. I said half of the ration of an animal from a mixed lot, half of the cost of it you find in the manure. Now at the present prices of bran and meal, after deducting the manure value, they will cost—bran $11 a ton, cornmeal $19, linseed meal $6, and cotton seed $1.50 per ton. That is their cost after the manure value is deducted. Let me tell you another secret. Down south for every pound of cotton they raise they have to raise two pounds of cotton seed. Two hundred thousand pounds of cotton seed meal are now made annually. And there is a great deal of it wasted. Then another 200,000 pounds is used up in the manufacture of oil, and they get little over thirty gallons per ton. Do you know that 100,000 tons are sold to the manufacturers of some fertilizers at about $20 per ton, and is mixed with something else and sold back to the farmer as a fertilizer at $40 a ton? One hundred thousand pounds of that is so sold to-day. Now, I think, I have said about all that is necessary. But I warn you not to let the soil get poor. As quick as that soil gets poor, poor in fibre, poor in reserve power—how we honour that reserve power, how we honour the man who knows enough to reserve something for to-morrow. How we honour our friend here. You meet him on the cars, on the street, and you take him for a commonplace, lanky individual. But the moment he gets up here reserve power comes out. He has told you about the reserve power in that little 850 pound horse that carried him to safety. Now the reserve power in the soil comes out and teaches us a lesson in time of drouth. They never found out how plants grow in time of drouth. Why? Because of the reserve power that does not come out till then to keep your plant growing. That is why the Lord made this rich soil on the surface of the earth. Don't let it be barren any more than you can help. Pigweed or anything is better than nothing. When it is cut fertilize and manure the soil, just in the fall after the hot weather has gone. That's the time. And not only will the plant be fed but mother-earth will be kept warm by it. And if you will—it is too late now—but next year if you will take a piece of sod ground, that you propose to sow for grain, and spread manure on it, and then another lot in April and May, you will, I venture to say, have twenty per cent. more corn.

A MEMBER—Would you advocate keeping manure all summer?

Prof. ROBERTS—You can draw out nearly all the manure in winter, and then you will have a little surplus left. We are drawing manure all day now. Would any of you think of putting a bin of oats there and putting a horse outside and never let him near it? The quicker you get your manure and land together the better.

Mr. DERBYSHIRE then moved a vote of thanks to the Mayor of Peterborough for his kindness in granting the association the use of the old music hall and council chamber, and for the morning sleigh drive.

Mr. BISSELL seconded the motion, which was carried.

Mr. HINMAN—I want to ask a question of the Professor. They had cattle that were not as near the north pole as we are, and I want to know whether they give the same results.

Professor ROBERTS—I have had cows from places farther north than Peterborough, and these are the cows that have given a pound of butter for 20 pounds of milk. I said yesterday there were breeds of cattle which should be bred for dairymen, and it has been shown that here you have different breeds to select from. Now, I say, there is a breed (pointing to Guernsey) we get 6,000 and 7,000 pounds of milk from a year, and that milk produces a pound of butter to 20 pounds of milk.

Mr. HOARD—I want to show you the difference between the earnings of cows in Wisconsin. The State census taker took the number of cows and pounds of cheese and butter made in each county. In the county of Sheboygan, the great cheese county, the cows made in butter and cheese $33.07, allowing 40 per cent. for use of milk. In Delaware county, $9.10 ; in Shaw, $8.43. Now I'll give you two towns in my own county, showing the value of thinking and reading and judgment in these matters. The town of Watertown is peopled entirely by Germans, a thrifty farming class, who never spent $50 on their dairy education in their lives. They made in 1885, 83,000 pounds of butter, and sold it for 12c. and 8 mills a lb. Another town gave 124,000 pounds, and each man gave some thought to the question, and they sold their butter for 21 8-10c. . A difference of $9,720 that the farmers of Watertown lost by not paying attention to their dairy education—more than their entire taxes for the year, Over $3.71 for every man, woman and child in it, and they would not spend 50c. a year for their dairy education. I think if you people in Canada did the same as we do on this question and get statistics before your people to show them the comparative earnings of different sections, it would be a good thing.

Mr. DERBYSHIRE moved, seconded by Mr. KIDD, that the thanks of the association be tendered to the instructors for their admirable reports and work of the past season.—Carried.

Mr. DERBYSHIRE moved, seconded by Mr. FIELDS, that the thanks of the association be tendered to the railway companies for their kindness in giving the delegates to the convention reduced rates.—Carried.

Mr. DERBYSHIRE also moved a vote of thanks to Mr. Hoard for his generosity in coming such a long distance to attend this convention, and for his instructive addresses.—Carried.

The convention then adjourned.

III.—DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

OFFICERS FOR 1888.

President, - - - - - - E. Casswell, Ingersoll.

1st Vice-President, - - - R. Cleland, Listowel.

2nd Vice-President, - - - - J. B. Lane, Dorchester.

Secretary, - - - - - - C. E. Chadwick, Ingersoll.

Treasurer, - - . - - J. C. Hegler, Ingersoll.

Directors :

Division No. 7.—John Prain, Harriston.

Division No. 8.—Francis Splatt, Dunnville.

Division No. 9.—Benjamin Hopkins, Brownsville.

Division No. 10.—William Messer, Bluevale.

Division No. 11.—Thomas Ballantyne, Stratford.

Division No. 12.—William Symington, Camlachie.

Division No. 13.—James A. Blaine, Gilford.

Auditors, - { John Craig, Woodstock. / J. S. Pearce, London.

LIST OF MEMBERS

OF THE

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

FOR THE YEAR 1888.

Name.	Post Office.	Name.	Post Office.
Allen, Alexander	Wallace.	Corbett, John	Rothsay.
Argus, William	Newry.	Casswell, E.	Ingersoll.
Anderson, William	Woodstock.	Clark, C. A.	Newbridge.
Austin & Bell	Listowel.	Coleridge, Wm	Dromore.
Aitcheson, A.	Listowel.	Corless, John	New Durham.
Alviston, W.	Rothsay.	Cook, Jonah	Woodstock.
Archibald, L. C.	Antigonish, N.S.	Cousens, George	St. Mary's.
Bean, W. H	Newbridge.	Curtis, D. W.	Listowel.
Bean, Angus A.	Tavistock.	Cleland, R.	Listowel.
Ballantyne, T.	Stratford.	Coleman, F. J.	Fullarton.
Ballantyne, R. M.	Stratford.	Climie, John M.	Listowel.
Bell, William	Walkerton.	Cohoe, E.	Norwich.
Bothwell, Wm.	Woodstock.	Climie, J. N. C.	Listowel.
Bant, John H.	Rothsay.	Campbell, D. D.	Listowel.
Brill, G. J.	Guelph.	Cowan, A. L.	Vyner.
Bray, Jacob	Listowel.	Casswell, Henry	Ingersoll.
Barr, G. H.	Cromarty.	Cline, F. E.	St. Anns.
Ballantyne, T. J.	Listowel.	Claridge, Wilbey	Palmerston.
Bell, Adam	Sebringville.	Dobie, Robert	Egmondville.
Brook, B. F.	Listowel.	Douglas, Arthur	Listowel.
Blough, Jas	Molesworth.	Dickson, James	Atwood.
Barr, R	Ethel.	Deer, E. H.	Delmer.
Brown, M. R.	Appin.	Draper, Geo.	Listowel.

LIST OF MEMBERS.—*Continued.*

NAME.	POST OFFICE.	NAME.	POST OFFICE.
Darling & Mabee	Listowel.	High, J.	Bayham.
Dunlop, Wm.	Fordwich.	Hoover, J. M.	Springfield.
Dempsey, John	Fairview.	Jones, Tom	Mitchell.
Dillon, T. J.	Bluevale.	Jones, Alf.	Oriel.
Drummond, R.	Care of A. Clement, Glasgow, Scotland.	Jack, Hugh.	Newton.
Derbyshire, D.	Brockville.	Jickling, Thomas	Listowel.
Edgar, Thomas S.	Gorrie.	Lamont, J. G.	Eastwood.
Eagle, Harold	Attercliffe Station.	Lane, J. B.	Dorchester.
Folsom, Geo.	Donegal.	Lilico, Peter	Listowel.
Ford, Miss Elizabeth.	Donegal.	Ludwig, George	Sebringville.
Ferguson, Robert	Listowel.	Little John	Henfryn.
Fowler, Alex.	Courtice.	Montgomery, John W.	Goldstone.
Goohand, G. E.	Innerkip.	Malcolm, F.	Innerkip.
Grieves, Thomas	Wyandotte.	Messer, Wm.	Bluevale.
Gilliax, George	Listowel.	Mayhew, E.	Renforth.
Garroch, Peter	Listowel.	Martin, Robert	Listowel.
Grey, W. W.	Newry.	Morphy, H. B.	Listowel.
Henderson, W. J.	Verschoyle.	Morrison, John	Newry.
Howard, Samuel	Gorrie.	Moore, G.	Kenilworth.
Harris, Wm.	Monkton.	Morrison, Jas.	Fullarton.
Hargreaves, George	Britton.	McLaren, A. F.	Stratford.
Hawkins, A. G.	Listowel.	McCartney, Hugh.	Brucefield.
Hoard, W. D.	Fort Atkinson, Wis., U. S.	McGillivray, M.	Listowel.
Hibbard, W. P.	Stratford.	McCrimmon, Sherman	Otterville.
Hay, Thos. E.	Listowel.	McLeod, Wm.	Thamesford.
Hay, R. R.	Listowel.	McLeod, T. N.	Thamesford.
Hapler, Jacob	Listowel.	McIntosh, Archie	Listowel.
Hess, Wm.	Listowel.	McCallum, J.	Belgrave.
Hay Bros.	Listowel.	McCunley, Jas.	Otterville.
Hunter, Samuel	Rockton.	McDermott, Jas.	Fordwich.
Hardie, Robert	Listowel.	McKeller, John.	Tiverton.

LIST OF MEMBERS.—*Continued.*

NAME.	POST OFFICE.	NAME.	POST OFFICE.
McKenzie, Alex	Carthage.	Symington, Wm	Camlachie.
McAllister, Samuel	Donegal.	Scott, J. W.	Listowel.
New, C. F	Ostrander.	Smith, C. W.	Mohawk.
Nimmo, E	Kincardine.	Sanderson, Benj	Linwood.
Nimmo, Tom	Kincardine.	Sillar, Thomas	Arthur.
Nelson, Frank	Palmerston.	Simpson, Alex	Jamestown.
Ovens, John	Atwood.	Stevenson, Wm	Britton.
O'Riley, H. H	Listowel.	Steinar, John	New Hamburg.
Prain, John	Harriston.	Sinclair, Duncan	Harriston.
Pelton, Alf. E	Innerkip.	Stacey, J	Fullarton.
Pickard, Amos	St. Mary's.	Steinhoff, Charles	Cainsville.
Pomeroy, Wm	Shakespeare.	Splatt, F	Dunnville.
Patterson, Wm	Moorefield.	Thompson, Geo. L	Bright.
Peebles, John	Donegal.	Taylor, Fred. C	Gorrie.
Pearce, John	London.	Thompson, William	Listowel.
Park, A	Blake.	Towner, George	Listowel.
Parrott, W	Cotswold.	Tanner, Wm	Mayfair.
Podmore, John	Ingersoll.	Turner, Eli	Wyandotte.
Ranton, S. T	Palmerston.	Tindal, H. A	Monkton.
Riggs, John	Listowel.	Van Clerk, J	Listowel.
Rumble, J. C	Belton.	Walker, James	Ranelagh.
Robertson, Prof. J. W	Ag. College, Guelph.	White, Henry	Pine River.
Robertson, George	Monkton.	Walker, Geo. A	Ranelagh.
Rolls, T. H	Listowel.	Wilson, Wm	Rothsay.
Robertson, John	London.	Wood, W	Molesworth.
Slevely, William	London.	Wright, Tom	Shakespeare.
Scott, Robert	Wallace.	Watters, Jas	Portage la Prairie, Man.
Shearer, John	Listowel.	Young, R. H	Pinkerton.
		Young, Thomas	Strathroy.

ELEVENTH ANNUAL CONVENTION

OF THE

WESTERN DAIRYMEN'S ASSOCIATION.

The annual convention of the Dairymen's Association of Western Ontario met in Lillico's Opera House, Listowel, at three o'clock p.m., Wednesday, January 11th, 1888. In the absence of the President, Mr. Thomas Ballantyne, M.P.P., Stratford, the chair was taken by the first Vice-President, Mr. E. Casswell, of Ingersoll.

The VICE-PRESIDENT.—It is now about time to call the meeting to order, and it becomes my duty, in the absence of the President, to take his place as chairman. I did not expect to have this honour, but I shall try to do the best I can, according to my ability. As there are so few here I shall not at present address to you the few remarks I intend to make, but shall do so this evening or to-morrow. I may say here for the information of those who do not understand the workings of this Convention, that hitherto it has been the custom, according to the Act, I believe, and, at any rate, according to the rules and regulations of the Convention, that all parties entering who are members shall pay $1 for the whole Convention and the report of the proceedings. Some gentlemen in Listowel have made a little alteration and have published that admission to the sessions of the Convention shall be free to farmers only, and that others have to pay twenty-five cents. We have had a meeting and have decided to allow everyone to come in free, and to go out as often as they wish, as long as they do not make too much noise. But we are in one difficulty, inasmuch as it requires a membership of one hundred in order to be able to draw the Government allowance of $1,500, so that if we permitted everyone to come in free in that way, we would really be adding no members. It will be necessary to have one hundred members to secure the Association in its proper constitutional rights and to be able to draw these funds from the Government. As a question of right or wrong we have nothing to say more than that the Board has passed a resolution that all be admitted free to the sessions of the Convention, and that members pay $1. We hope that every one who feels an interest in this matter will become a member, so as to enable the Directors to carry on the Convention in a proper and constitutional way next year. No one can vote who is not a member, and I would advise all who intend to become members to come up now and give in their names, get the badge and pay their dollar. Business cannot be done without the dollar; even if a man has a reputation and a business he cannot get along without it.

A number of those present then came forward and were admitted as members.

The VICE-PRESIDENT.—The first business is to appoint a business committee to arrange the programme of the various sessions. I appoint Messrs. Cleland, Lane, Symington, Robertson, Dickson and Messer.

QUALITY OF PRODUCT AND COST OF PRODUCTION.

Mr. W. D. Hoard, of Fort Atkinson, Wisconsin, was then called upon to address the Convention, and on coming forward was received with loud applause. He said:

After so flattering an introduction as we have just heard I certainly should be very much lacking in that appreciation of praise which I think belongs naturally to dairymen if I did not respond at once. If there is anything in the world that I like it is to meet the faces of men who belong to the same church as I do. I never was very strenuous, however, as to denominational lines. I always believe, as did the old farmer once up west, when the minister came on from an eastern college and said that he would try to bring himself down to their comprehension. He said to his congregation, "You know I am just from a college in the east." This old farmer, who was sitting on the front bench, yawned and said: "Just drive ahead, we're all from somewhere." It is pretty much the case, my friends. Consideration of the great central problems affecting our well-being and success is still the vital question. We do not exhaust the truth. Still as ever she lieth at the bottom of the well, and strong must be the rope and persistent the effort that brings her bright and shining to the surface. I find but little difference, from what little contact I have had with Canadian dairymen, in the interests of your situation as compared with those which have more immediately confronted me. I have been dealing with the people for thirty years in Wisconsin; they have been studying from their standpoint the same problems that you are studying, and in some principles we may have beaten out different lines from you, and in other principles you have beaten out different lines from us.

But after all, the great question to us to-day is summed up in two sentences. First, how shall we improve the quality of our products, since it is quality that regulates prices; secondly, how shall we decrease the cost of production, since it is the cost of production that regulates the profit? There we have the whole question in a nutshell. First, quality regulates the price, yet how many are clearly alive to that fact? We go to work and destroy the quality in a thousand ways. Take our administration of cheese factories in Wisconsin and Canada; we are destroying quality in a thousand ways. First, we hire inefficient help because we can get it for a dollar or five dollars less a month. Is there any sense in that? We are too apt to do what my grandfather said to me his whole mistake in life had been, viz., that he held the cent so close to his eye that he couldn't see the dollar six inches away. He confessed it to me as an old man.

We need brains in the administration of our factories to-day—and I am going to speak more particularly about the production of cheese—we need intelligent and well trained heads in our factories to secure quality, and yet we often go to work and administer without reference to the effects on quality; we hire cheap help, when we cannot get a good thing in this world without paying a fair price for it. In the next place we go to work with factory buildings which are a disgrace and shame to us all over the whole country. Now, Wisconsin abounds with a lot of cheap trashy cheese, which should blush in shame for its birthplace, miserable building, which no intelligent builder should construct. Why? The curse of cheapness again comes in—cheap thought, cheap administration, cheap judgment, cheap help, cheapness at every turn, and the result is miserably unsuitable buildings. Now then, we have very variable temperatures here and one of the most tricky climates in the world, both in Canada and Wisconsin. I have seen the thermometer vary thirty degrees in twenty-four hours in the midst of our cheese-making season, and still we have not laid out any intelligence on the construction of our cheese factories. We have no curing rooms. We lay down as a foundation fact that the judgment of our average cheese maker concerning the philosophy of the principles of cheese curing is lamentably low in comparison with the knowledge of cheese-making. Now, we must have intelligent surroundings for cheese. A cheese is like a baby. Who does not know that you can take a boy and with just the hint of evil in his tender mind produce that condition in him which never can be corrected? Cheese is the same. It has its youth, its babyhood, and its old age and full strength. Now, we need good curing rooms; we need some intelligent

advice regarding the construction of our curing rooms. I have been in half a dozen cheese factories this fall. I started out and made a regular trip and picked out in a day I think eight factories. One day in November, the cheese in the curing room was being heated by stoves, and here the cheese was being roasted and there it was cold, sour and bitter—bound to make poor cheese. I talked to the man about the matter. I took along with me a little thermometer to know about it. The theremometer here at one place registered 74°, and over there, at another place, it would register 50°. Now, it was folly of that man to undertake to hold his cheese. I suggested to this man who had a steamer in his factory, "Why don't you put in pipes and heat the curing room with steam?" He said, "You would have to keep a fire all night." I replied, "Does the fire burn in the stove all night?" "Well," he said, "it is not down very low in the morning." "How low?" I asked him. "Well," he said, "it is a little chilly when you come in in the morning." That man was trying to cure cheese. The more I talked to him the less opinion he had of himself, and as a corresponding fact the less opinion he had of me, and it resulted in both of us declaring a truce and leaving cheese alone.

We need to enhance the quality of our products, and then we need to reduce the cost of production. Now, we have the cost of production, as far as the mechanical make-up of cheese is concerned, down to about a minimum. That is not where the trouble lies. The cost of producing to-day does not lie in the factory but on the farm. We have got to do something to-day to more thoroughly stir up the man who produces the milk. Now, what shall we do? Well, we have a variety of agencies to work. How is it with churning butter? We agitate it, don't we? We might have the best cream in the world, but if we did not put it in the churn and agitate it we never would get butter. We might have the best brains amongst us producers, but if we don't put them in the churn they will produce nothing; we must agitate. I believe to-day that our cheese factory centres often have a higher power that rests in their own hands unused. They could become in Canada and the United States, the most potent weapons and agencies for the promotion of intelligent knowledge of any agency which exists. Practically speaking they are the school houses dotted all over this dairy country. They should be considered as school houses and men should go to school in them. They should be made centres of intelligent discussion. Every single cheese factory proprietor and every cheese factory manager should have during the winter half a dozen meetings of patrons and discuss questions belonging to the business. (Hear, hear and applause). Now it is no great job to do that. I have come 800 miles to attend this Convention. I go to Pennsylvania to attend another, and I have gone to Georgia, Mississippi and Louisiana. I have gone here and there though it seemed to me as if we were directing our attention altogether too largely to isolated large meetings. The mountain will not go to Mahomet and Mahomet must come to the mountain. That is the idea—reach the minds and judgments of the men who produce milk.

Now, I will give you an illustration. In the State of Wisconsin, a few years ago, I was called upon to act as referee between the patrons of a factory and the proprietor, who had got into loggerheads with each other. They agreed that I should come and hear their statements, see who was wrong, and do what I could to devise a way out of the difficulty. I went to the factory and found that all the difficulty lay in just this point, that the patrons themselves had not a clear idea of what their duties were towards the central idea—the manufacturing of the cheese; and the manufacturer was not a man of sufficient intelligence to lead them out into the right road. I suggested that we should hold meetings and discuss these questions. We not only settled on a plan of agreement, but I went to the factory about half a dozen times in the course of the winter and we held some meetings and took up the questions of the production of milk, of the character of the cow that produced it, of feed, of stable management, and of pasturage. We took up all those questions belonging to the cost of producing milk. Now, to-day that is one of the most flourishing factories in the State of Wisconsin, and it has the finest lot of patrons I know of; all growing out of that simple little system of factory management, and the holding of meetings and discussion of these questions. Now, a portion of the patrons of that factory was composed of Germans who could not read English. They took hold with avidity, and we found a number of Americans who could

read English, but were less interested in the discussion of those questions than the Germans were themselves.

Now we have organized in Wisconsin a regular system of farmers' institutes. Those conventions are taking up these questions one after another. Now, I think we should go from this Convention with some ideas of what we can do for the people at large through this district and through this province. This Convention cannot meet everybody, but certainly it can throw light upon a system of management that will radiate from this centre. Don't you think it can? Don't you think this Convention should be a public educator? Now, if it is going to be a public educator we should certainly bring about a system whereby to reach the public. In 1870 we started in Wisconsin to agitate the dairy question. Your humble servant, I believe, was the first one to commence the agitation. Take my own county, Jefferson county, as an instance of the value of agitation. In that county at that date there were but two men that made their butter according to market notions, packed it according to market judgment, and shipped and sold it in a butter market. Every other man in the county took the butter to the country cross-roads store and said: "Whatsoever measure ye mete out unto me shall be acceptable unto me therefor." What was the result? The result was no education, no intelligence, no study. The butter was a reproach. We took hold of this little matter of education. We started in this way: We commenced to organize in Jefferson county a dairymen's association. We had been running that a year when we sent out and organized the Wisconsin State Association, and only six men met to organize it. Now, my friends, we have been going on in Jefferson county these eighteen years. To-day the cows of Jefferson county contribute one million and a quarter of dollars to its coffers. There are between 1,500 and 1,600 men to-day, who, as private dairymen, make their butter and send it to Chicago, Philadelphia, New Orleans, Pensacola, Boston, and other places, and they also pay attention to local markets. We have a large number of creameries. We had at one time a large number of cheese-factories, but they have been slowly merging into creameries. Now then, the practical effect upon the wealth of that county has been marvellous, and it has all grown just in proportion as the mind of the farmer was operated upon, and not his hands. Brain must go ahead of the hand. The farmer must be intelligent or he cannot earn money. He cannot go along and administer upon his estate with executive success, unless he has intelligence, and that comes by getting into the channels of intelligence. A man stands on the banks of the Mississippi and says, "I don't believe that stream runs to New Orleans"; or he stands on the banks of the St. Lawrence and says, "I don't believe that stream runs to the Gulf." You say "You never will believe it as long as you stand on the bank and don't get into the current." Men must put themselves into the current of dairy knowledge. How will we get at the men who want this knowledge? By this local agitation. In 1870 we were at a low ebb in the prosperity of our agriculture. We had emerged from the wheat growing era, and we were sick at heart. In 1880, according to the banks of our county, there were seventy farmers who were depositors, where there was one in 1870. That meant practical wealth, practical advancement, didn't it? The cows had increased from 10 to 3,000. The land had increased from $25 an acre to $60, all growing out of this little practical bit of agitation.

But do you know we have one slow, dull county yet. I want to show you just exactly what the practical effect of intelligent thinking, reading and study of this question has been. The town of Watertown is a solidly German town. I know but one or two men in it who are of any other but German parentage. The farmers of that town are a thrifty people and good citizens, but they paid no attention to the dairy question. They did not read English, and as a consequence, their papers did not give them the information, and they did not get hold of dairy judgment and dairy thought. As a consequence, you could not reach them. Now, in 1885, according to our State census, they made 83,000 lbs. of butter. I will show you what effect it has on men to study these questions. That butter sold for 12.8 cents a pound. They sold, as they had always been selling it, to the country cross-roads store. You could not make them do differently. Now, another town made 127,000 lbs. of butter, and the farmers of that town sold it for 21.8 cents a pound—a

difference of nine cents a pound, just for intelligence alone and nothing else. The land is better in Watertown, the weather is as good in one as the other, and they are only twelve miles apart. I call attention to what these people lost because they would not educate themselves on that point. They lost on the butter they made, not on something they objected to make, but on the butter they had actually produced, nine cents a pound. They never had paid $50 in their lives for dairy education, and they lost that year, $7,570, which was more than all their entire taxes; and there was not a farmer who would not have jumped over a six-rail fence to be told how to escape paying his taxes. Yet there they went along absolutely losing this money. I took the population down and I found that they lost enough to amount to $3.71 for every man, woman and child. The county of Kenosta and the county of Kewaunee, on the Lake Michigan shore, have equal facilities for dairying; yet the latter, because it did not pay attention to these questions, or agitate them, lost on their butter alone the amount of $35,940, or more than their entire taxes. I went before the people of Kewaunee county last June and held a farmers' institute. I took up the census and said, "Gentlemen, these are the figures for this town; here they are exhibited before you; what shall we do with them? You lost nearly $36,000; your entire taxation was $21,000." When I laid those figures before them it seemed to startle them, and they began to inquire about the census figures. I said they were drawn from the State census and that they showed the facts. They said, "If this is the way we are going in this matter it is time we brought round a reform." It was time that they looked at the question from the standpoint of the farmer.

Now, we have to-day this example in Canada, that of the Canadians doing business with a cow producing only 3,000 lbs. of milk in a year on the average. Why, it is not more than enough to barely give back your pay for the fodder you give that cow, at the market price. She will cost you $25 to $30 a year to keep her, and it is a mighty good thing when you get one dollar a hundred for the milk the year round. If on the average they only produce 3,000 lbs. of milk a year there must be something done. It is a discouraging business to dance attendance on an old cow and get nothing but her manure. Something must be done and something can be done.

I will illustrate what can be done by the example of a poor old German who came into my office eleven years ago, and said in his plaintive, touching simple manner: "Mr. Hoard I haf only 60 acres of lant, I haf 9 children, und dot vos not much goot. I haf a vife und I am a poor man; I got in debt und I haf got a mortgage." He said, "I got discouraged and I don't know what I will do. I don't like to see myself going this vay; I hear a goot deal said about de dairy peesnes and I vant to come und talk mit you. Ish der any help vor me?" Here the simple appeal of the man touched my heart. I said, "To be sure there is; there is help for any man setting resolutely to work and not looking away over there for salvation, but right here." He said, "Vat vill I do; I haf no money, I haf 9 cows; vat shall I do?" I said, "Do this. Start in right where you are. We will not consider you worth a cent on earth. We will start there." I said, "How much do you get for butter?" He said, "I am getting a shilling." I said you should get 25 cents. He said, "I can't; it costs too much money." I said, "Have you money enough to buy two kerosene barrels, and we will take them and burn them so as to get rid of the taint of the oil and they will make two vats?" The way he was making butter at that time accounted for his not getting more than a shilling a pound for it. His "frau" was cooking cabbage and he was smoking his pipe, and there was the milk absorbing all these taints so that he could not make decent butter. I said to him, now we will go down to the tin shop and buy some long cans costing about 60 or 80 cents, and we will buy enough to put the milk of these cows into the cans, you have a wind-mill at the well; we will buy $5 worth of lumber and put over the well to keep the sun out, and set the two barrels right there by the well so that the water may be pumped in and run out of them. We will put the milk into the cans and set it there. "But I can't make dot butter," he says. I said, "I will make it for you." So we got a churn, and, all told, the expense was $20. His "fraw said to him, "Carl, Carl, dot Yankee vill humbug you sure, sure." But Carl had faith, and he said, "No, Lucetta, I dinks dot Yankee is taking it all right and dot begins to look like somedings; I dinks I can see a leettle." So when the cream

was ready I went there and took off my coat and made the butter, packed it in little 20 pound packages and I sent it to a commission man in Chicago. "Got in Himmel!" said Carl, "if it goes to Chicago I vill never see it again." He was full of fear and trembling. I said, "Don't you sell it to Mr. Henderson?" He said, "Yes." "And who does he sell it to?" "Vell, I don't know, he must send it to somebody sure." I said to him, "Can't you send it to the man that Mr. Henderson sends it to?" "Maybe," he said. So we started him. I sent the package of butter to the commission merchant, and I wrote to him and said, "My friend Carl, coming up out of great tribulation and trying to secure his salvation with fear and trembling, appeals to you to sell this butter squarely on its merits and send him the proceeds." It sold for 25 cents a pound. He sent me the cheque and I took it and drove over to Carl's house. The scence was worthy of a painter. The tears came to Carl's eyes, "25 cents a pound! 25 cents a pound!" He got Lucetta round the waist and began to waltz her round the room. "Dot vos no humbug," he said. That man took his start then and to-day he is a dairyman with 60 head of cattle and is worth $20,000. (Applause). That little work started with Carl. I have been a sort of adviser with him ever since in the improvement of his cattle, and now to-day that man has upon his farm all the improvements, silos and all appliances by which to cheapen the cost of production. My friends, it does not need the doctrines of an Erskine or the eloquence of a Burke to do it. It needs a close practical study of the problems which lie at our feet. In Canada or the States the problem is the same. How shall we enhance the quality of the product? for therein lieth the price; how shall we decrease the cost of production? for therein lieth the profit. (Applause).

The Vice-President.—I think you will agree with the remarks which have been made by Mr. Hoard, and will fully substantiate what I said about him. I would like to ask that gentleman one or two questions, and would also state to the meeting that it will be quite in order at any time, even when a speaker is addressing the meeting, to ask any questions that may occur to you, or, if you prefer, you can make a note of it at the time and ask afterwards. I think there is more good done with the ideas which are thrown out in that way—the asking of questions from the floor—than in any other. At a subsequent stage of the convention there will be a question drawer, and a piece of paper will be handed round and questions put down, with the name of those whom it is desired shall answer them. There has always been a feeling that enough familiarity has not been maintained between the speakers and the members of the Association, and in that respect I hope that this Convention will be ahead of its predecessors. The first question I would ask Mr. Hoard is this: You spoke about educating the people and visiting them. How do you manage to reach the people in any different way from these Conventions?

Mr. Hoard.—Well, the latest outcome is the farmers' institutes. They grew out of these other efforts, but at the time we were depending on ourselves alone we formed county associations. You know what the old farmer did when he wanted to fertilize his farm. He had a lot of barren knolls, and he harrowed first one and then another, and he said that he noticed the knolls seemed to be a great deal better the longer he harrowed them. So with the old county associations; we would meet at Lake Mills say this week (we generally had meetings about once a week), and we would have a meeting on Saturday afternoon usually. The next week we would go to Fort Atkinson, and the next week to another place, and so on. Then I took occasion myself to go out and hold little meetings in the school houses and at the cheese factories. They would write to me and I would suggest a certain line of topics. We would discuss them, every man would come forward and tell what he was doing and what he could do. We took simply the means at our hands, treating with the cheese factory's organizations as we had them, and we kept up discussions amongst ourselves. Afterwards the State Associations came up and grew to be a grand affair. Now, the State of Wisconsin appropriates $12,000 annually for the holding of these farmers' institutes. We held 80 this year with two staffs of workers. Mr. Morrison is the superintendent and is the best organizer in the

world. The meetings are held for two days each. Now, the practical effect of this agitation has been this: Last summer we had a terrific drouth which swept the State as with the besom of destruction. I saw only four loads of hay taken from ground where twenty were taken the year before. But mind you, by the discussion of these questions, by pushing into the minds of the farmers of the State these important problems of how to cheapen the cost of production came the silo and ensilage. We built in Wisconsin last year 515 more silos than there were before, and planted over 56,000 acres of fodder corn for winter use. A large portion of it was put in the silos, and the effect of that was to add to the feeding value of the State to the amount of 200,000 tons of hay. That helped us out of the drouth amazingly. We are beginning to see that we have gone stumbling along for years with these plain problems at our feet. We have been looking away all *over there* for some Gilead to furnish us the balm and lead us out of distress, when the true Gilead was at our very feet.

QUESTION.—Why are these cheese factories merging into butter factories as you state?

Mr. HOARD.—I think one reason is that Canada is clearing us out on cheese. I think another reason is that our cheese factory people have been so greedy that they have damaged their own market for their own product.

QUESTION.—How?

Mr. HOARD.—By making cheese which nobody wanted. I am quite certain, from my experience during the war, when I had occasion to notice the effect of shot in bombardments—I am quite certain that I could pick out cheese made in Illinois, though not so much in Wisconsin now as a year or two ago, which would have answered every purpose of shot for a bombardment, except that they would not explode. They would stand anything they struck against. (Laughter.) Another reason is that we get a very good price for our butter, taking it the year through. It has been averaging about 25 cents, and with increase in the demand for fine butter has given such of our people as have been willing to become posted an opportunity to get out of the everlasting slow majority and has given them a chance of making more money than they could have made with cheese. Again, here is a problem, my friends, just coming to the front in the cheese business: How can you get paid for the solids which you put in the milk? You have to face that question or the cheese business will get shaky. We voted $1,500 last year to study the problem of how to test milk to give a man honest dividends for what he furnished in his milk when he brought it to the cheese factory, whereas now we are putting a premium on rascality—on poor cows—putting a premium on the pump, and not on the solids in the milk. Now, as a consequence, the oil test, the weighing test, etc., give us a chance. So if a man wanted to improve his cows he should have pay for the difference between the good quality and the bad, or for the greater amount of butter he put in. At my own creamery at Fort Atkinson we take in just now 6,000 pounds of milk per day. We run a separator and we return to the patron 80 per cent. of the skimmed milk. He gets so much a hundred pounds for his milk, according to the true value of it.

QUESTION.—What is your opinion with regard to the profits to be made on butter and cheese, provided a good quality of cheese is made?

Mr. HOARD.—We have had it run very close. The tendency of milk production is to value butter and cheese according to the state of the market, but we in the United States have a better butter market than you have in Canada. Remember that while in Wisconsin our cows are increasing only 5 per cent. the population is increasing 12 per cent., and that to-day is a pretty good answer, when a man predicts that you are going to over-do the business.

QUESTION.—Is the butter you make consumed at home as a rule, or is it exported?

Mr. HOARD.—All fine butter is made for the home market and sold in Chicago, New York, Boston, New Orleans, and various other cities in the United States; very little of that is shipped abroad. Our butter to-day is sold at 32 cents.

QUESTION.—The idea prevails that silage feeding affects the butter. How do you find it?

Mr. HOARD.—We find that it increases the quantity and improves the quality.

QUESTION.—You don't find it leave a bad taste?

Mr. HOARD.—No, sir; it increases quantity and quality.

QUESTION.—Is much meal or grain fed?

Mr. HOARD.—Yes; our average run is about four pounds a day of corn-meal, six pounds of bran, or, if we use oats, equal proportions of oats and corn together, four pounds of that and about six pounds of bran.

QUESTION.—What is the price of bran?

Mr. HOARD.—At present it is about $15, but I think our people will buy bran even if it sells for $20.

Mr. CHEESMAN.—Last week you told us at Peterboro' that you were now getting the same result in milk for nine cents, by substituting ensilage for clover, which cost you a year ago 17 cents. Will you explain, please, what your ration was a year ago and what it is to-day?

Mr. HOARD.—A year ago about 25 lbs. of clover hay and about the same run of grain, at $10. This year clover hay is worth $12 to $14. At the present price of food, on a ration the same as I fed last year, the cost would be 17 cents per day, and now with ensilage it costs me 9 cents.

Mr. CHEESMAN.—The silo in place of clover you mean?

Mr. HOARD.—Yes.

QUESTION.—And what are the results?

Mr. HOARD.—I will have to tell you a story about the results. Last winter we had a session of our farmers' institute at Green Bay, and we had one whole day devoted to ensilage. An old German by the name of Shultz, one of the shrewdest, longest-headed men in that section of the country, was put down to tell the results of silage feeding. He came to me and said: "Now, I don't could spoke dot English very vell, und I make a humbug of dot. If I got you to write dem out, you put dem down und I tell you de tings what was in it." Now, I said, we have to tell about the results; they are a sharp lot of men and they may break you down. You have to tell what the results have been as compared with the former system. He said: "Vell, I tell you, alvays efry year before I hef alvays lost the hair on my own cattles. I nefer safed dot hair to go into de manure und vhen I haf to wait und turn de cattle out und I got de hair to start den de vind pblows und it floats off, und my neighbors get dot hair alvays. Dis time vhen I haf the ensilage de hair come off und goes into de manure, und dot is a big ting." This shrewd way of putting the question of the difference in the condition of his cattle was much appreciated by the audience, and they applauded him heartily. I said, have you any more results? "Vell, let me see," he said. "Oh, yaw. Dis time I notice de cattle don't stand chust de same as before mit de whole four feet in von hole; dey got dem spread out dis time." I think the improvement in the condition of the cattle is one of the greatest comforts possible to any man handling that class of fodder.

QUESTION.—Don't you use clover at all in combination with ensilage?

Mr. HOARD.—Yes; we give them about five pounds as a noon feed. As a sort of variety, which does good to her, the cow gets along much better with it. Another thing, I think it helps the cow in the matter of rumination and it starts the saliva. We feed our cows all their feed dry.

QUESTION.—How long would an acre of ensilage feed a given number of cattle? I want to get at how much land it will take to grow ensilage for say ten or twelve heads.

Mr. HOARD.—I can figure it out exactly. The average production on good land of what we would call a good fair crop of B. & W. corn—that is, heavy ensilage corn which

we buy in the south—is 20 tons an acre, green. You plant 3½ feet apart and drop the kernels 6 inches apart in the rows. We estimate 5 tons of ensilage to be a full ration for a cow 200 days, with a little margin over. Now, if we get 20 tons to the acre in the silo—and Prof. Henry's experiments this winter showed that it only shrank one-quarter of one per cent.—you will see readily that an acre would support at least four cows with a margin. Now then, we grow lots that does not go more than 12 or 15 tons, and sometimes it goes 30, and 20 would be an average. There is a heap of difference in various soils as in grass. Now, five tons of that ensilage will support a cow 200 days, or you have a feeding power on one acre of four cows. Now, it is a pretty good average if you get an acre of meadow land which will support a cow for the winter.

The CHAIRMAN.—Yes, besides grain.

Mr. LANE.—I put mine 18 inches apart. You think that 36 inches produces a finer crop?

Mr. HOARD.—Yes; much finer; We start a little ear upon it and then it becomes a question of maternity. The ear is the object of the plant growth, and if you have it you put into action all the forces necessary for the secretion of sugar, the gums, and the other things which make it valuable. Then you arrest the growth of the corn at its richest period.

Mr. LANE.—Some of mine grew ten feet high and produced small ears.

Mr. HUNTER.—Have you silos or ensilage to perfection, or is it just an experiment?

Mr. HOARD.—No; it is no experiment, but we are just in the process of evolution. We have made corrections. We no longer make sour ensilage. This year there will be over two thousand silos built in Wisconsin. This coming season, I am safe in predicting, there will be over 100,000 acres of fodder corn planted. If it goes on at this rate, gentlemen, it will not be five years when the whole corn crop of Wisconsin will be pretty much for silos; and that will enable us to increase the working area of our farms. We will have less acres and will have a larger number of cows to the acre. Then we will try to get better cows, so as not to get three cows to do the work of one.

Mr. HUNTER.—You don't think it necessary to have pits below ground?

Mr. HOARD.—They are all above ground now. They are all wooden silos.

The CHAIRMAN.—Before calling on my friend Mr. Derbyshire, who is ex-president of the Eastern Dairyman's Association, and was president for several years, who will speak on the same subject, I would just say that as a member of the Association for many years, in working with Mr. Ballantyne, he has always tried to do the best he could for the interests of the Association. We have always done our best, with the other directors, to bring forward things which would be of interest and benefit to the country at large and to the dairy business. But we have felt, as has been said here to-day, that the time has arrived when the usefulness of this Convention is over. Now, although that may be said in a certain sense, it cannot be said in a real sense. We have come to the conclusion, and have proved, that it is difficult to expend the money to advantage which the Government allows us unless some steps can be taken to reach the patrons. Now, as a body of directors, from year to year we have done our best to reach the patrons. We have done so by pamphlets, by having the Convention reported, and the pithy things said noted and published for free distribution. But though free, the patrons would scarcely take them from the office, many of them being left. We have reached almost perfection in continued progress, and my friend says we have scooped the Americans in cheese making. They have to go to butter making. I point to results, and the good results of this Association have been seen in the efficiency of our cheese makers, so that the Conventions have been useful and are useful, but there must be some means adopted by the directors and the management to reach the people at large and the patrons. We have almost reached perfection, I say, in cheese making, so much so that we have sent

instructors to Britain, who have given evidence of the value of their practicability so that they have taken prizes to a large amount where there were competent men. Mr. Drummond is again hired to instruct the cheese makers in Scotland. This is his third year at an advance of salary, and he has been a success. It is a proud thing for Canada to say she can educate the old country in making cheese. With regard to this Convention having passed its useful day, I did not mean that we could do away with the Convention, but that some action might be taken by the directors to reach the patrons, which they have failed to do. I believe something will come out of this. I believe what Mr. Hoard has said will have influence. We should be pleased if any gentleman on this floor would hint to us a better means by which we could reach patrons. We do not want to get money from the government to speculate with or to hoard up and keep in the treasurer's desk. We want to expend it and every dollar we get from membership for the good of the dairy interest. How are we to expend it? We have not expended it; we have husbanded it, and we have now $1,100 on hand; and if everything goes on right we shall have $1,500 more from the Government, which will make $2,600. Now what we want to know is how to expend it to advantage. We have been showing the cheese maker's excellence, but the cheese maker cannot make good cheese with bad milk, and we must therefore reach the patron and show him he must back up the cheese maker if we are to have a good article. We usually find a large amount of bad milk. The best results are where the people are well educated. Last year it was talked about asking the Government for a large amount of money to send out instructors. It was thought better not to advance the amount until we could see how it was to be used advantageously. Instructors, I believe, have been around in the eastern portion of the province. The Convention must be made a success; patrons must be reached, and they will be reached. We adopted the plan last year of holding conventions in large centres of dairying, and a great deal of good was done; but even there we did not get out one-tenth of the people.

CHEESE MAKING IN ONTARIO TO-DAY.

Mr. D. Derbyshire.—What we have heard from Mr. Hoard and our worthy president would remind one that—

> "Lives of farmers oft remind us
> Honest toil don't stand a chance;
> The more we toil we have behind us
> Bigger patches on our pants."

(Laughter.) That appears to be about the result, judging by the remarks of the president and Mr. Hoard, that the farmer is the party we want to get at. That is the great problem we are seeking to solve at the present time. I think you will agree with me, Mr. President, that it is most difficult to get people out to our Conventions. In the eastern part we have had no trouble in expending any amount of money we could get. The difficulty has always been to get the money. We have had this year two instructors, one in the eastern portion of Eastern Ontario and one in the western portion of Eastern Ontario. We have been devising plans, and there was a report at our Convention by a committee, of which Prof. Robertson was chairman, with the idea of asking a contribution from each factory of Eastern Ontario of ten dollars, in addition to the Government grant. If we therewith employ two more instructors, that will take every dollar we have—more, I think, than we can get. The instructor would go from factory to factory giving instructions, and provided with proper instruments and having the knowledge to make proper tests of milk in each factory.

You are aware that the troubles and conflicts we have in our factories are not few. One source of trouble is that when a farmer furnishes twenty or thirty cows' milk to the factory you must smile and shake his hand whether he furnishes fine milk or not for fear he may go elsewhere. We expect the instructors will go and inspect the milk and practically look about, without interfering with the management of the factory, and be

themselves held responsible to a proper party appointed, as it were, by the Government. As the president has said, I believe our cheese makers—that is a number of them—have been brought to a high standard, but we have even in this great province of Ontario over one-half of the cheese makers who are unfit for manipulating milk and are not qualified for the business by which they pretend to get a living. They have not the ability or appliances to handle milk so as to get the desired quality. We expect to remedy this. There is a point with regard to our buildings. Over half of our buildings are unsuitable for the use for which they are calculated. I have been in factories this year where you will see oil running out of cheese close to the stove while others fifteen feet away will be almost freezing. How are you going to have cheese bringing the highest prices with this kind of management? I am satisfied the first thing we want to do is to get proper buildings for manufacturing milk in.

I believe everyone should belong to some factory. Every patron in the whole Province should know exactly where to go, and if he has sent his milk to a poor factory he should use his influence to make it the best factory in the country, and with his aid—*with the aid of the patrons*—the manufacturer will be able to make it so. I was in a factory this year where the man was trying to make cheese with an overcoat on. He would have worn mittens if he could have handled the milk. It is impossible to make "Cheddar" cheese in a cold atmosphere. There was a time when it could be done with some degree of safety, under the old sour acid cheese system. Now we require to have a warm atmosphere. Take a lady handling bread; she takes it up to the stove and keeps it at a uniform heat to make it light. You have noticed the difference when the bread falls back. Why, it will be like this hard oak cheese which my friend would shoot for cannon balls. It would kill at any distance. Now, the nature of the process of cheese-making is nearly the same as that of bread-making. Unless you can keep up the temperature to about blood heat in the curd while the cheese is maturing, it is impossible to make the finest cheese. We must have the finest cheese. We cannot keep our present place without commencing in earnest in this matter. We must be in earnest and we have got to make good cheese. We must have *fine* goods in the factories which are now making *fair* goods. Competition is becoming keener and keener. Americans are laying out large sums with the idea of beating Canada. I heard the Governor of New York (the present President of the United States) speak at Ogdensburg. He said they should do anything to beat Canada let the money cost be what it may. They rather smiled on me. I did not think they could ever beat Canada or one side of it, because with the intelligence we have, with the soil we have, I do not think there is a better country in the world if we put the same brains into the business that is put by other people. It is a great discredit to us that we have only 3,000 lbs. of milk on an average, while we have several of our best dairymen who are furnishing 6,000 lbs. of milk to the factory from each cow, and have made $60 a cow. I could give you the names of several who have done this, and if so, why cannot everyone of you, provided you go to the same pains. In the first place, you must have a proper stable where you can control the temperature, as in your cheese factory. You must take proper care of the cows. You must have cows bred for the purpose by which you expect to make money. We have a great many of our farmers to-day furnishing milk who are really destroying their profits, and are decreasing the average of our Province on account of the poor miserable make-up of their cows. I know that in this glorious genial country there is no place where a cow is so comfortable as in a warm stable where it is well ventilated, where you can save the manure to increase the fertility of the land. We must look at these things with intelligence, and the quicker we do it the better it will be for us. If we calculate to hold on to that proud position which we have to-day in the markets of the world with regard to the quality of the goods we have been manufacturing, I am satisfied we have got to make a better quality than we are now making. If those people that manufacture a poor article of cheese were the only ones that suffered, I would not feel so badly at all, for we could make them stand all the blame; but if we ship from Canada all this cheese they hurt our reputation on the other side. We have many factories in our section concerning which I have received telegrams from time to time, saying that I must buy their cheese—without mentioning the price. Of course I never

mentioned that to the salesman. We have telegrams regularly to buy the goods of certain factories, because they have a standard reputation in the old country, because they have what people want, and they are bound to have such goods. A few years ago I used to do a large butter trade. This year I have not shipped a solitary tub to Montreal. except to a few doctors and lawyers who were not very particular about quality. Our Brockville and Morrisburg milk is the finest in the world, and we used to command the highest price of any Canadian butter. To-day it is taken out of our hands. They have been making better butter in Holland and other countries of the Old World. Our people have been doing as they did a hundred years ago, if they made it themselves, making an old-fashioned, bad-flavoured article which you could smell at any distance, salted highly, put in a miserable, poor cellar, badly ventilated, and keeping it until it begins to rot before offering it in the market at all. Thus they expect to compete with the United States where the people are waking up in all these questions and are becoming educated in various ways.

As to this ensilage business, I am satisfied when you hear Mr. Hoard to-morrow on that question, you will decide it is something you must take up here. The cost of our production is no doubt twice what it should be. With reference to the cows, there is no necessity of keeping ten cows to do the work of five. It is a great loss and we cannot afford it. We must have a class of cattle which will give 6,000 lbs. of milk. I saw a cow which they told me gave 20,000 lbs. of milk in the year. I see an old gentleman shaking his head down there. I saw a report where they name a cow which gave 26,610 lbs. and 2 oz. That is, of course, a larger quantity than I want you to get at the present time. I do not want you to breed that kind of a cow at present, but you can get one to give 6,000 lbs. ; I think that is a low standard.

Mr. Hoard.—It is only 20 lbs. a day for 300 days.

Mr. Derbyshire.—A cow that does not do that, feed her up and send her to the butcher and get one which will, because it is useless to continue the business unless we have thoroughly educated every man to the principles of dairying. Farmers must run this business for the purpose of making money. Are there any factories in this district where the buildings are *opener* in construction than barns?

Some Delegates.—No. No. No, and laughter.

Mr. Derbyshire.—We have them in the east, and if you have any, pull them down and build warm, comfortable ones where the finest article can be made. I have gone to factories where ladies are the makers. You could see the sour look upon them when you dropped in on a cold morning when everything is working badly. Such is a sour place to go to. There is no necessity of having more than one fire or boiler. You can have pipes running from it giving a uniform heat in the curing room all the time. There is one point the farmer neglects in the east, and I suppose in the west, and that is the proper aëration of the milk. Unless the animal heat is taken from the milk as soon as it is milked, you cannot make the finest article, though you may make a good plain article. Many of them put the can in the wash tub and pour water around it and sometimes into it. (Laughter.) And some put a chunk of ice into it. All these plans are wrong. Have a long-handled dipper. Aërate the milk with this dipper. Don't put any water in it. Stir it from the bottom every few minutes. Get it properly cooled and aërated at the same time. That system will work perfectly ; in fact, and I believe there is more loss to cheese makers—far more comparatively—on account of the poor milk delivered from this cause than from any other. If you are going to make butter be sure you aërate the milk before putting it away, and so with the milk from which you make cheese. Make the best milk you possibly can, have proper buildings and proper implements, and with these used skilfully and with judgment you can make the finest article of cheese in the world.

Feeding of the cows is important. Cows are often allowed to drink out of cesspools, drinking impure water. Eighty-seven per cent. of the milk is water and the water should be of the best quality. There is a tendency in our country to build a cheese factory at every cross-road corners. We hear of some person who never made a pound

of cheese in his life who will say he will build a factory within a mile of a first class factory and he may promise to make the cheese for a cent a pound less. Now, that should be put down—trampled right under foot. How can such a man expect to manufacture without any previous knowledge any more than he could expect to successfully conduct a dry goods store in competition with those who have run it for years. A cheese maker could not expect to succeed without being properly trained in the line of business he expects to follow. Let men combine and have large influential factories; have the best machinery, the best engine, the best cheese maker and have everything in the best condition, and then you will have the best results. These small badly manned factories are a curse to the country and will be until you run them out. To have the poorest buildings and implements is to work great damage to the interest of cheese making. Such cheap conveniences that are not convenient are the dearest things in the long run. What we want is excellence of quality. Only by this means will we be able to hold our present foremost position in the markets of the world.

HOW TO DEAL WITH DISHONEST PATRONS.

The Chairman—When speaking about what the directors have done in the past, I omitted to say that something should be done to enable the directors or officers of each cheese factory to have power to go to the patron's premises when they find that something is wrong with the quality of the milk furnished. But I believe if you send a committee to examine and test the milk it would be considered trespass to do so. A committee was appointed at last general meeting, consisting of Messrs. Ballantyne, Lane, McMillan and Cleland to see some eminent parliamentary lawyer and find out what could be recommended for incorporation in an Act to secure the punishment of defaulters. I believe Mr. Cleland has done so and will present his report to-morrow. In addition to the earnest entreaties which are to be made to the patrons there must be a higher power to punish those who will not listen to these, and if there can be a law enacted—if this meeting will pass a resolution to back up the directors—no doubt good results will flow from that.

Mr. Derbyshire—The way we manage it is, the instructors drop right into the factory. Nobody knows anything about their coming. They test everybody's milk without warning. If any person does not furnish right milk he gets a nice letter that evening, and you make a reduction of what you think they have been stealing and add it to the dividends of the factory.

A Voice.—Can you do that?

Mr. Derbyshire.—Yes; taken in his guilt he will never resist. Say a man has furnished 20 per cent. water and you, perhaps, took 20 per cent. out of his money, saying, "You have practically stolen that much and we keep that back for the other patrons." We have settled that with them everytime and never had a law suit.

The Chairman.—I think this is the best rule that could be followed. It would be law just among factorymen if the factorymen would just send word to each one found guilty that they would not take any more milk from his farm.

Mr. Hoard.—That is the way to do it without exception.

Mr. Derbyshire.—There might be a combination amongst the factories not to allow him to go to the next factory.

Mr. Hunter.—Before this question is dropped I would like to have some information. Speaking of punishing patrons for sending poor milk, unless you have previously made arrangements with a man to furnish milk up to a certain standard, could you punish him? Mr. Derbyshire says we can work our cows up to a capacity of 6,000 lbs. per year. That means we must increase the flow of milk, but nothing has been said about quality. Now, if I increase the quantity from 3,000 lbs. up to 6,000 lbs. and put no more butter-fat

into it, I do not put anything into the milk. If I sell the milk as it comes from the cow, without adulteration, I do not think any factoryman should object to my milk being used.

The CHAIRMAN.—I think it would be better that this discussion should come up to-morrow when the question is under consideration. I will now introduce Prof. Robertson to continue the discussion.

PROFIT AND LOSS IN DAIRYING.

Prof. ROBERTSON then delivered the following address : I am pleased with what has been said here this afternoon, and also at seeing so many dairymen coming out to attend the first session. I was pleased with the trend of Mr. Hoard's remarks, which were directed to showing that the man we must reach is the man who makes the milk. I will speak for a short time on the outlook for dairymen and on how the resources of this Association can be best used.

I think they can be best used by trying to educate the man who furnishes the milk, thus making him a better man. It is not enough that a man should be told to do better ; for unless a man is helped by some means to do so, he does not supply better milk long. The outlook is very blue for Canadian and Ontario dairymen unless we can help them to help themselves. We have been too much occupied satisfying ourselves with ourselves, and congratulating ourselves on making the finest cheese in the world, and on having a reputation second to no nation, no man disputing.

He only is a prudent and progressive dairyman who recognizes the weaknesses and needs as well as the excellencies and attainments of the business. First of all, then, what stares us in the face is that, while we have had some profit from dairying, very few of us know where the profit has gone. We hardly have examined down to the bottom principles or defined the practice guiding those who have been working to the most advantage among us. Some engage in dairying because their neighbors do so, and not because there is any profit in it for them.

I think those who have produced the best milk have got the most of the profits, and those who have not done so have no profits, because producing good milk is usually allied to and connected with producing lots of milk. If I can make a cow, which up to a given period yields only 3,000 lbs. per season, increase her supply to 6,000 lbs. I make a larger percentage of butter-fat in that milk by increasing it.

Now, those who have produced the best cheese and butter have had the profits, because there is a profit only in the best. There is no profit in producing any other kind of article from the dairy. There is permanently continued profit only in producing that which we are best fitted to produce by our climatic conditions, soil conditions and market conveniences. We can produce as good cheese and butter as they can anywhere else, and we can produce it as cheap or cheaper. We have everything to favor cheap production. The outlook is rather discouraging unless we take the advice so frequently given to make the very best butter and cheese, make all of it of that quality, and make it at the lowest possible cost. If we don't do that we cannot long go on dairying with satisfaction or success. Every dairyman must try to help his neighbor to make better goods and to make better returns on the money spent in making them. If we calculate what it costs to produce what we have to sell I think we would be helped to lengthen the line of profit. I do not complain of nor fear the competition from the United States, even with their silos ; because while they have a few men who make the most out of their farms, and while we have some who do so, still we have lots of men who do not yet make the most out of their farms. But we can improve as fast as they can and make as much progress as they can. Competition should merely stir us up to do better. Therefore, we should not fear it.

The business in Canada must have been paying or it could not have been developed so fast to such an extent nor stayed so long with us. Otherwise it would have gone out of fashion. Nevertheless, while it has stayed in fashion, there have been serious losses all along the line which we might as well have avoided. Let me call attention to one or

two of these losses. During the past summer the exportation of cheese from Montreal amounted to 1,104,065 boxes made from the milk of about 275,000 cows. Now we have in this Province alone some 750,000 milch cows. For the manufacture of the total quantity of cheese sent from Montreal during the summer—including those from the Province of Quebec and some from the United States—the milk of about 275,000 cows was used. You will see that the business is capable of great extension without any increase in the number of cows kept.

Let me detain you a few moments by presenting a necessarily imperfect analysis of the profits of these 275,000 cows. In the main it is correct. Upon enquiry made of the secretaries of cheese factories, I find the returns in cash from cheese would be nearly $36 per cow to the best patrons of the factories. Such patrons would own in the aggregate about 75,000 cows of the total 275,000. Then by learning the returns paid to the patrons of the same factories, whose cows give the smallest yields of milk, I find that such patrons realized only $16 per cow from the factory proceeds. The latter patrons would own in the aggregate about 75,000 cows of the total 275,000.

By a little further examination and calculation I find that the cost of keeping cows in Ontario during their milking season would be about $22 per head for feed. I allow nothing in that for labor or care because I judge the value of the manure to be equal to these. Taking $22 from $36, we find that men who had herds of good milking cows had $14 per head of profit from the cheese factories. Those who fed at more expense during the late fall or winter or early spring would get extra returns from butter making and stock raising to more than compensate for such additional feed. Those dairymen whose returns were only $16 per cow must have kept their cattle at a serious and unmistakeable loss. Besides, those dairymen who get the largest returns per head from the factories are usually the men who get the largest supplementary receipts from butter sales in the spring, fall and winter. I judge that the remaining 125,000 cows of the 275,000 just about pay for their keep and leave no balance. Hence I am justified in saying that the profits from cheese dairying in Ontario last season went into the pockets of the twelve or fifteen patrons of each factory, who kept suitable cows and managed their business with intelligence and care. I do not wonder that some men say, "Dairying does not pay."

But if we can increase the average yield of these 275,000 cows so that they will give us as much as the best 75,000 cows what would be the consequence? We would have about $10 a head more return from each cow, and that would mean $2,750,000 of extra profit. The cost of the keep of these poor cows is just about as great as the cost of the best ones. So we have not merely an extra return of $2,750,000, but extra profit of that amount. I think the possibility of the dairying business in the line of profit is not recognized yet. The men who have made most profit in the past are the men willing to impart their knowledge to others. If you find a man secretive as to how he gets along, you will generally find he is not making the best results. He is ashamed of the results. Every dairyman should be willing to impart information to his neighbors. I call your attention to the way by which every dairyman can get his share of this increased profit. He can only get it by recognizing that dairying is a branch of his business that requires his particular and personal attention. Now if a man is going to make dairying a special source of profit he should give to it his special attention. He should not leave the whole management in the hands of the women folks. If a man who feeds the cattle also milks them he will attend to them better than if he does not give their product his personal attention. Thus a man to get profit from his cows in summer time has during the winter months to plan and prepare to get that profit. A man cannot wring profit out of his cows by springing upon them his intention to get milk without suitable feed. He must prepare them by a course of treatment. Winter time is the season when the farmer, to get the most out of his cows all summer, should prepare for it by planning how many cows he will keep, how much grain feed and green fodder he will need, what he will do with the milk, etc. Having made up his mind, let him act with persevering intelligence and he will act successfully. A man will not succeed unless he has a definite aim in view, and a definite purpose of what he means to do. Now, if those who want a large share of profit will begin investigation this winter, they will, I am sure, get one-third more milk

from the same cows without extra food by just caring for them in the best way. I have proved that by experience.

Now how can the resources of this Association be best utilized? I judge it would be unwise to deliver an address upon the education of dairymen this afternoon as I intend to speak upon that to-morrow. I have tried to give the subject my best thought as to how dairymen can be helped in the most efficient way. I am rather surprised to learn that you have so large an amount of money on hand which can be used to improve dairying methods. Now, I think while the Association has been charged as having passed its day of usefulness that the charge is quite unfounded.

Because a boy stops going to school that does not say that he has quit studying forever; a successful man will be a student the rest of his life. In the past the Association has been instructing men who came to the Conventions; it has done admirable work, but there is another work nc less important. It can continue to instruct cheese makers; but it should make them instructors, and make them teachers in their own localities, and not merely in manipulating curd and handling milk. It should provide means for teaching them how to make milk of the best quality and the most of it at the least cost. I think the funds of the Association may be judiciously spent in that way. We should have local meetings, not merely for the instruction of cheese makers but for the enlightenment of patrons. Men don't greatly require instruction given wholesale in a general way, but they need to come into personal contact with those who have been in the business and made it a success. If we had meetings in the fall addressed by the best farmers in every neighborhood, these would be effective in doubling the profits from the business in two years. I think we might spend part of our funds in that direction. We should also pay the expenses and necessary salaries of milk inspectors. Cheese making instruction and milk inspection are urgently needed. As long as honest men have suspicions that some of the patrons are acting dishonestly they want to throw the thing up. We thus drive our best men away from the factories. I think the Association might spend part of its money in getting milk inspectors appointed. In these ways by-and-bye our Convention would become more and more a deliberative gathering by which we would reach the patrons by the agencies at work under its direction. When we do these things and build as many silos as are in Wisconsin and have as many cows giving large yields of milk as they have there, we will be well able to have competition go on. We will thus be able to maintain our reputation for high quality and to establish our reputation for producing as cheap or cheaper than they, and thus with more profit to ourselves.

COMMITTEES.

At the request of the Chairman, the Secretary read the standing resolution with regard to the Nominating Committee.

The Chairman pointed out that one director must be chosen from each electoral district, and the following were elected as members of the committee: Col. Campbell, James Dickson (Atwood), Wm. Symington, A. F. McLaren, Wm. Messer, J. B. Lane, John Prain.

The Chairman appointed the following Committee of Judges on Dairy Furnishings: Mr. McLaren, Prof. Robertson, Wm. Messer.

The Convention then adjourned to 7:30 p.m.

EVENING SESSION.

Upon resuming, the Chairman called the meeting to order and announced the programme for the evening. He then introduced Mr. Francis Malcolm as one who had been a successful practical dairyman, and who had taken 6,000 pounds and over out of his cows. "If there is a man who is capable of enlightening you on what can be done in theory, and what has been done in practice, Mr. Malcolm is the man."

PRACTICAL DAIRYING.

Mr. MALCOLM.—Since I came here I have noticed I am known by quite a number I did not know. I account for this by the fact that I have been in your part of the country on several occasions talking to dairymen, and some of those young men who have met with me at such times have altered in their appearance more than I have done, so that they are out of my mind. However, I see I have quite a number of friends here. Many of you are aware that I have had experience with cows, and if I have not made myself rich out of it I have made a living for a number of years. My subject may be treated under three heads—breeding, feeding and care of milk.

There is no doubt there are some breeds of cattle that have a greater tendency to produce milk than others, and the wise dairyman will keep this in view, and by taking advantage of this fact endeavour to improve the milking quality of his herd. This is an important feature of dairying, and I am satisfied there has not been as yet, in this Province sufficient care taken in this direction. However, there is one thing that should not be lost sight of and that is, that while you gain in one direction you lose in another. This is a law in nature, and must be recognized in all our efforts. Men have always been trying, and I suppose always will, by some combination of wheels to gain power without losing speed, or speed without losing power; but they will never accomplish it. Now what is true of machinery, is true with our stock. If a man wants a horse with great power of draft, he breeds it; but he can't have it with great speed. Or he can have a horse with great speed by sacrificing power; or he may combine those and have what is called a general purpose horse. The same holds good with fowls. The best for table use are not the best layers, and *vice versa*. Now, I contend that cows are no exception to this law. In our cattle there are two desirable qualities, beef and milk. The dairyman is after milk, and he should study to keep that feature prominent in his herd. But if he works this to the highest degree, he is losing in another direction. It is not all gain. It is a disputed question whether it is better to have a purely milk breed at the expense entirely of beef, or to have cows that may be turned to either purpose at pleasure. There are some reasons that make the latter desirable. It is very often that cows fail to get in calf. Abortion may take place, injury to the udder, or the loss of perhaps more than one teat, any of which causes may make her useless for the dairy, and it is well if she can be turned into beef at a profit.

The cattle that were common in this Province a good many years ago, and known as "*Canadien*," were, (considering their size, and the way they were kept) many of them excellent milkers, but almost useless for beef. Strictly speaking they were not Canadien, as they were brought here by the first settlers; principally no doubt from the United States. They were a much better breed for the dairy than we now give them credit for. The best cow I ever knew was one of them. My father bought her for twenty-five dollars about fifty-three years ago. There is still some of that cow's blood on my farm, and the best cows I have ever raised was in that family. I said to a brother not long ago that I had come to the conclusion that a cow like old Pinky would be worth $500 as the basis of a dairy herd. He said, "You are right." Now, although those cattle were hardy and naturally good milkers, we were not satisfied with them, and we commenced to cross them with what was supposed to be a superior breed. If we had known more of their history, they would have been more highly prized. From the best of my recollection, the early settlers knew very little about breeds. I never heard in those times, that a red cow with a white face was a Hereford grade (and such cows were common). If we had known that such a cow belonged to one of the noble breeds of England, she would have been more thought of. It was common to see cows with a muzzle and the mousey colour peculiar to the Jersey, but I never heard the name mentioned. The same might be said of the black and white and brindle, as indicating the Holstein. Those cattle were as a general thing badly used grades of some of the best breeds in the old country. For many years we have been improving this mongrel breed by the introduction of short-horn blood. We have increased their size, and their tendency to beef, so that now the popular cattle of this part of the Province, is known as grade

Durhams. If the beefing tendency is not carried too far, a dairy cow of great excellence is obtained. Many of them have the property of milking through the cheese-making season, turning all the food you can give them into milk, and be quite thin in the fall; but as soon as they are put dry, make up rapidly, and prepare with good body for another season. No breed will make better use of the food they eat than the grade Durhams. It will be either milk or beef, and I think you will agree with me when I say that the percentrge of our cows that are fat in the fall is very small. In breeding for the dairy I have practiced and advised, to try and have a few of the best cows calve about the first of March. This gives the chance to feed the calves milk for several weeks before cheese making commences. These calves should receive such care as will keep them growing and in a healthy condition from the first, and be brought to milk when twenty-six months old.

I understand a good many are trying what the introduction of Holstein blood will do in the way of improvement. I hope it will be a success. However, I would recommend caution when it comes to very high prices. It is just possible you may get no more profitable cattle. But I do recommend most heartily doing better with the breed you have. I would also recommend any one who has a first-class cow, valued at fifty dollars to add other fifty to the price. This means that she is not for sale. Take good care of her, raise all her heifer calves, and be equally kind to them. My experience is that it will pay. The great mistake that many dairymen make is not so much in the breed, as in thinking there is a breed that will give milk without food. Although I have given some attention to breeding, more has been given to feeding. Not in the way of experiment, I had no time for that, and I could not afford it. But I have had faith in liberal feeding. There is sound philosophy in it. Every cause has its effect, and I was after the effect. I cannot say that it would not be possible to feed dairy cows so as to make them unprofitable, but I have never seen it done. There is evidently very little danger in that direction. I visited a Scotchman a few years ago about twelve miles west of Stratford who kept sixteen cows. He was the best feeder I ever met with. His cows were fat. I said: "Do you think it pays to feed like that?" His reply was, "I don't know, but I like to see the cows fat." He was evidently a successful dairyman that took pride not only in his cows, but in his business. And I may add, those are the kind of men who always send good milk to the factory. If all were like them, there would be no floating curds.

This fact should never be lost sight of in feeding, whether it be for cheese, butter or beef, that the quality and quantity of the product depends on the quality and quantity of the food. The cow is a machine for working one product into another, much the same as a mill. The quality and quantity of flour that comes from the spout will depend on the quality and quantity of wheat that goes into the hopper. However, there is this difference, the mill may stop and a waste of power cease, so that the cost of running depends on the amount of work done; not so the cow. You may have a certain quantity of material such as pasture, hay, roots, etc., to turn into milk, and you may keep so many cows that the whole of it is needed to give them a living, and there is no surplus. The dairyman must understand that in order to do successful work, he must have his machine—the cow—in good running order, that is in good condition, and keep it so, and then all he has to look to for profit is from what is given for the the purpose of producing milk. Does any one suppose they can gain anything by withholding food? Yes; every year hundreds are trying it, but what is the result? The cow commences and gives milk at the expense of her flesh. Is milk obtained any cheaper from beef than from bran or chop stuff? We should never practice what we cannot intelligently defend. And I am sure no one can defend the practice of half feeding dairy cows. About three years ago at a Farmers' Institute meeting, a farmer made some remarks, in which he admitted that grain growing had run down the fertility of their farms, and advised dairying as a means of recuperating. He said 100 acres would keep twenty cows, which would make thirty dollars each (600 dollars). But why keep twenty cows to make $600, when twelve would do it on the same value of food? Is it not evident that there would be a clear gain of the cost of eight cows and their keep? These are the kinds of mistakes that dairymen are continually making. I

am not advising dairymen to produce more milk than they are doing, but trying to show how to produce it with greater profit. I visited a locality in the county of Perth a few years ago where I was informed the highest average per cow on the factory books was twenty-five dollars. I stopped all night with one of those farmers, and we talked the feeding question over in the evening. In the morning he said, "I have been thinking that matter over, and I am going to use fifty dollars which I have in the house in buying something good for my cows." He was a good farmer, but he could not defend himself in the way he kept his cows. To illustrate another feature of the feeding question I will mention another individual who wrote to the Woodstock *Sentinel Review* a few years ago, stating he kept twenty cows, that he had kept an account of all they had eaten in the course of the year, and when he had estimated its value at the market price, he found he had only thirty-six dollars profit on the whole. So he asked the question, "Where is the profit in dairying?" This conundrum I was requested by the editor to answer, which I did by showing that the profit in dairying must not be looked for between the market price of the food and the value of the milk, but between the market value and the cost of production, just the same as in grain growing. That the cow was to be looked upon as a medium for marketing the produce of the soil, that if she would give the market price, and a little over as this experiment showed, and the manure in addition, it was a much better way of marketing than selling in the crude form at the market price. It is just here where the great advantage of dairying lies, and the still greater if feeding is done with a liberal hand. The question is sometimes asked, "Will it pay to *buy* food such as bran and chop stuff for cows?" It will, just as well as to feed what is raised on the farm. The advantages of liberal feeding is not confined to the quantity and quality of the milk, nor to the fact that the cows are always in such condition, that if anything occurs to destroy the usefulness of any for the dairy, they may be turned into beef at small cost, but the manure pile must not be forgotten. Its value depends on what is fed, just as the value of ashes depends on the kind of wood burned, and the value of manure is no small item in this account. An estimate made some years ago by Joseph Harris, of Rochester, and other scientific men, of the value of manure from a ton of bran, or red clover hay, was that it was equal, as compared with artificial fertilizer at the usual market price to $9.60. In other words, if a man was in such a position that it would pay him to buy artificial manures, then the manure from a ton of bran or red clover hay was worth $9.60 to that man. And although none here may be in a position to buy fertilizers, still there may be a good many who deem it wise to take care of what they have, if they could be convinced that that estimate was true, they would not sell clover hay at ten dollars per ton and draw it ten or fifteen miles to market. They could with greater confidence and cheerfulness pay out the money for a few tons of bran to help to keep up the flow of milk in a dry time. Do not forget, then, that there are three things to look to as pay for liberal feeding—the extra milk, the extra condition of the cattle, and the manure. The dairyman is on the wrong road, who for the sake of a temporary advantage that a few dollars to-day may be put in his pocket, reduces the fertility of his farm or the condition of his cows.

So far I have said nothing about how feeding should be done in detail. If a man is convinced that liberal feeding will pay, he will soon find out the method that suits him best. But I must say a few words in regard to the treatment of cows. This has much to do with the saving of food. A part goes to the keeping up of heat. It is as effectually burned for that purpose as wood in a stove. If cows are exposed to a degree of cold that makes them uncomfortable they use part of the food in counteracting or overcoming that cold. Then it is important that they should be kept comfortably warm. A farmer requested me to come to his barn and see his cows. When we got to the yard gate I saw they were in the yard, and some of them had their backs up and were suffering with cold. I said, "Why don't you have them in the stable?" "I do stable them," he said. "They are not in the stable now," I added. "You wouldn't stable them in the daytime?" he asked. My reply was, "I would stable them whenever they were more comfortable in than out. To stand in the sunshine on a calm day and absorb the heat is good for them, but cloudy days and cold winds are very injurious." The idea I wish to impress is that all suffering, from whatever cause, is at the expense of food. And this is true with all

living animals. What say you then to the practice of allowing cows to stand around for hours in the cold wind trying to get a drink of ice cold water? If people could see the actual loss in dollars and cents it would make a difference. If a farmer was really aware that 25 cents had leaked from his pocket while his boy with a dog was rushing his cows along the lane there would be a row, and perhaps that boy and dog would suffer.

In closing this part of the subject I will just refer to what is spoken of by scientific writers as the "nutritive ratio." I have neither the ability nor time to do this part justice, and will only say that it is a well known fact that there is great advantage by giving a variety of kinds of food. No one thing will do. If it is desirable to feed a considerable amount of straw, more value can be got from it by feeding roots and a certain amount of chop grain or bran. If a cow is confined to straw you will notice that she lives partly on the straw and partly on her flesh till she becomes poor, and when the flesh is gone she must starve to death. What is wanted is the grain and roots to take the part performed by the flesh. The greater the variety of food the more powerful and healthy will be the digestive organs, and the more economically will stock be fed.

I intended to say something about the care of milk but my paper is long enough. I will therefore leave that to others.

Since writing the above I took the following newspaper clipping which will be seen agrees with what I have advanced in several particulars. It is by Prof. DeMott, of Indiana :—

The following is considered the very best ration for a medium sized cow, and if properly fed will bring a full 100 per cent. return. It will pay anyone who keeps a cow to try it for a season :

Good clover hay cut fine and moistened	15 lbs.
Oats and corn ground together in equal parts, by weight	8 lbs.
Bran	6 lbs.
Linseed meal, new process	2 lbs.

The oats, corn, bran and linseed meal should be mixed thoroughly, dry, then mixed with the moistened cut hay and fed one half in the morning and balance for evening feed. Give plenty of pure water after morning and before evening feed. Give table scraps and slops after but not with the regular feed. Keep the moistened hay where it will not freeze. It will pay to give warm food and water in cold weather. The flavour of the milk will be improved by using a curry comb and brush every day. By all means keep the cow well bedded.

The CHAIRMAN.—Please state the result of that year when there were three or five heifers in your herd. I ask this because it will prove what these gentlemen said this afternoon.

Mr. MALCOLM.—I am now engaged as a beekeeper though I spent the best part of my life as a dairyman. I had twelve cows and five two-year-old heifers. Every month I addressed a card myself to the secretary, who lived some miles from me, and requested him to give me an account. The monthly account from his factory is that from which the following figures are framed except the last two months :

April	8,570 lbs.
May	14,867 "
June	16,408 "
July	15,419 "
August	14,217 "
September	11,301 "
October	8,229 "
November and December	14,157 "
Total	103,168 lbs.

or an average of 6,067 lbs. per cow. I am of opinion that if dairying was carried on as it ought to be and as Mr. Hoard recommended—that is with intelligence—that a higher average might be reached, that 7,000 lbs. might be reached very easily. I may mention I was among the first members of this convention many years ago in Ingersoll, when Mr. Farrington was active amongst us. I went to the convention, and was not many minutes in the hall before Mr. Farrington rose and asked if I was in the hall. I was then asked to come to the platform, and Mr. Farrington said: "We understand you have made 5,000 lbs. per cow this year; we want to know how you did it." I mention this to show the direction in which we are going. At that time there was no other man in Oxford or at that convention who could say he had taken 5,000 lbs. from a cow. That is not thought anything worth talking about now. There are quite a numb r in the convention here I know who have frequently taken their 5,000 lbs. It is no new thing at all, and I have been taking 6,000 lbs. on different occasions, and 6,000 lbs. is not worth talking about as much now as 5,000 lbs. was then. I believe the time is coming when all may have 7,000 lbs. It only needs better care and better feeding. This 2,500 and 3,000 lbs. of milk is all a mistake. I tell such people it is better to give up dairying altogether; there is no profit in it. As an old Scotchwoman said to me lately, "We don't practice dairying here; we only play at keeping cows." If a man is going to keep cows he should do it so as to pay a profit. The profit is not on the first 3,000 lbs. of milk; it is on the second 3,000 lbs.

Mr. DERBYSHIRE.—That is where the money is.

Mr. MALCOLM.—Yes; I have proved that by experience. The profit comes in in having good food. There is no use saying we have not got the right breed until you get the right feed and care. The results I have mentioned are from grade Durhams. I do not say others will not give more, but I say if you go into purely milk breeding you will lose the "beefing" qualities. If any comparison can show by factory books that the Holsteins or Shorthorns are coming out best then let us have it. It is results we want, and if results prove that they are best it will have the effect of others adopting those breeds.

Mr. HOARD.—How did you feed your cows that year?

Mr. MALCOLM.—It was a good year for pasturage. We got our cows up in good condition in winter, and we tried to have them come in in the month of March. We had quite a number of them come in on the 1st of April. We kept them in the stable and fed them along pretty well until there was good pasturage, and there were a few weeks then when they did without anything extra. About the 20th of June they began to drop in their milk. I knew if they went down in their milk I might feed them in the fall as much as I liked and I could not get them up, so I thought I would try and keep them up. I bought bran for about nine dollars a ton at one time and fed right along through the summer for several months. I asked a friend how he would feed bran, and he told me he got a pound of milk from a pound of bran. I do not know whether I ever got that, but if I was sure that I got half a pound of milk from a pound of bran I consider it would be pretty good, inasmuch as we had the manure and an improved condition of the cattle in addition to the increase of milk. The cows were milked in the morning, and it did not take long to teach them to walk into the stalls when they knew they were going to get something. We took in a tub of bran and ran in a certain quantity, guessing it as nearly as possible, to each cow before breakfast. When we were done with breakfast the cows were ready to go out. The difficulty is in haying and harvesting when we must have a way which will not take too much time and trouble. I asked my friend how to do it. He told me to get some cut grass or clover and wet it. "But," I said, "that will take too much work." "Then," he said, "feed it dry." We found it pay, and it was not long until my neighbors thought it paid, and began buying bran. They actually raised the price of bran, so that the man who made the bran has to thank me for increasing his market. I do not put much value on this western corn. I had considerable young early corn. I threw the most useless of the stalks by themselves and drew it out and spread it on the dry pastures, where the cattle ate it up clean. So we went on through the season. The season previous to this I had a friend from up west

and showed him my cows. When he saw them he said, "They are worth ten dollars apiece more than they were last Christmas." I think I got enough extra milk to pay for the bran, and then I had the manure. If you will find me five dollars worth of bran for a cow in the course of the summer I will guarantee, aside from milk or manure, to put her up at auction and she will bring four dollars to five dollars more than other cattle which are not fed in this way.

Mr. HOARD.—Did you have any experience in feeding green pease?

Mr. MALCOLM.—We have fed them mixed with bran, but only by way of an experiment. I would like to ask you the value of pease as food?

Mr. HOARD.—Very high as milk food. It is albuminoid food. I do not think any food in the world compares with pease.

Mr. ASHLEY.—Do you think the manure derived from feeding a ton of bran is worth as much as stated in the paper? I think it is a little misleading to our people, because we do not buy these fertilizers, and when you compare the manure value as equal to the value of the fertilizers to people here who do not buy them, I think it is rather misleading.

Mr. HOARD.—I think that it is misleading with regard to the value of bran, because there is no clear conception of how the value was obtained. This is the way it is done: For instance when bran is analyzed it shows so much phosphoric acid, so much nitrogen, so much potash. You will get by analysis in the ton so much nitrogen, so much phosphoric acid, so much potash. Now, the value of nitrogen and potash and phosphoric acid in markets where they are bought for manures is: nitrogen, 17 to 19 cents per pound; potash, about 5 cents, and phosphoric acid, I think, somewhere in the neighborhood of 10 cents or 11 cents. Now go to work and buy those artificial manures; you will pay just so much a pound for that very material.

Mr. ASHLEY.—That is where it is misleading. Artificial fertilizers are worth more on land worn out where they know them than they are to us who do not know them.

Mr. HOARD.—That is not the fault of the fertilizers.

Mr. ASHLEY.—I do not believe Mr. Malcolm, though he believes it is worth that, would pay nine dollars for manure made from a ton of food. If he will not pay that, it shows he does not consider it is worth that.

Mr. HOARD.—That is not hardly plain, because there is many a time the worth of a thing is what it will bring in the market. New Jersey last year paid out $3,000,000 for artificial fertilizers—for these articles. Now physiological chemistry shows that bran goes through cows, and they usually only extract twenty per cent. out of it for the purposes of milk; that after it passes through the cow it analyzes eighty per cent. of those ingredients. Now, take a ton of bran, and Mr. Terry, Ohio, has made the experiment of using bran as manure, putting it right on the land, and found that it answered him just about as well as artificial fertilizers, with the same profit. Now if we go at it that way, digesting our judgment, we will not be misleading. In Wisconsin Hon. Hiram Smith, who buys several car loads a year, says its practical value to him there is eight dollars a ton; that it has put into his land a productive virtue equal to eight dollars a ton. He keeps 100 cows on 200 acres of land. He could not do that unless he used some agency whereby the land became tremendously productive.

Mr. ASHLEY.—If Mr. Smith could go into the cities and buy a ton of stable manure for a good deal less, would it meet his purpose?

Mr. HOARD.—It would not.

Mr. ASHLEY.—I do not think any farmer in this room would give nine dollars for every ton of food he put on his land, and if it is not worth as much it is not fair to make us believe it is equal to fertilizers which are worth it.

Mr. DERBYSHIRE.—While you are not believing it you are practising it. (Laughter.)

Mr. ASHLEY.—I have fed my cattle hay all winter, when I could get twelve dollars to fourteen dollars a ton for it. I had a great deal of manure, and the land was made rich by it.

Mr. HOARD.—What kind of hay

Mr. ASHLEY.—Timothy.

Mr. HOARD.—The poorest kind of feed there is.

Mr. ASHLEY.—I saw afterwards I should have taken straw and chopped stuff. I do not believe there is a farmer will give nine dollars a ton for this manure.

Mr. MALCOLM.—The reason I got up the paper was to impress the fact on farmers here that bran was valuable as manure. I gave the statement of one of the most scientific farmers in the world, Jos. Harris, of Rochester. I told you what he said.

Mr. CHEESMAN.—When did he say it?

Mr. MALCOLM.—A few years ago, in the *American Agriculturist.*

Mr. CHEESMAN.—Seven or eight years ago?

Mr. MALCOLM.—Yes, all of that. He said people were sending every month finding fault with his statement, that it was not worth that. He replied that he never said it was. I did not say it was. What he did say was that if a man was in the position in which he was, actually buying a fertilizer, then the manure from a ton of bran was as good as nine dollars worth of any other fertilizer. The value of manure depends on what you are going to do with it. It is hard to say comparatively what the value of manure is.

A VOICE.—Do you think it would pay the farmers of Elma to pay sixteen dollars per ton for bran?

Mr. MALCOLM.—It will pay better than starving your cows.

The PRESIDENT.—We have always found it a very difficult thing during the last thirty years to talk to the farmer and tell him something will be beneficial that will draw the dollar out of his pocket unless he believes it himself. The most successful factories undoubtedly are those which have fed bran.

Mr. DERBYSHIRE.—The paper is a most valuable one. It has demonstrated what we tried to show this afternoon, that 6,000 pounds was the proper basis for the yield of a cow under a true factory system, and that any man who has only 1,500, 2,000 and up to 3,000 pounds—and you know the average of the province to-day is only about 2,700—that those men are keeping cows at a loss, and that the time will come when they will have to go out of the business, because it will never pay with the competition that we will have. I assure you our friend is right in his paper, with the exception of his idea that he is not breeding for a purpose, and that his Pinkey was not a special cow bred for the special purpose of giving a large amount of milk. It is just as impossible to have such a cow, and at the same time to have it a beef animal, as it would be to have a big horse drawing six tons be a horse going a mile in two minutes and some seconds. You want to breed for a purpose. Breed a cow for giving milk or else for her beefing qualities. You must first single out your business, and then work down to that line for a particular purpose. If you are going into beef you do not get a cow which will give a great quantity of milk. So with the other, you must have cows which will turn food into a large quantity of milk. I wish most heartily to commend the paper as a practical lesson which we should all take to heart, as showing what care and attention will do for the farmer. If this gentleman can get 6,000 pounds of milk so can you do it. Then, in place of $9,000,000 of money brought from the old country for cheese into this country, we will have $18,000,000.

Mr. MALCOLM.—We have had very square, smooth, nice grade Durhams bred from good cows from a thoroughbred Durham bull, and I have had some from which I have taken over 7,000 pounds in the summer. I have certain cows calving in March. I know certain cows which have commenced and given twelve dollars worth of milk before

others started, and every day through the summer they have given more from day to day. Therefore, I think if I have an average of over 6,000 pounds there must be some cows which gave over 7,000 pounds.

Mr. CHEESMAN.—Before the question is dismissed I call attention to a few figures submitted by Prof. Roberts. At Ithaca they sell milk at five cents a quart. The American quart is one-fifth of an imperial gallon, which is therefore 25 cents a gallon Canadian measure. The food was weighed for three days for 21 cows and the cost of the milk obtained from them was 74 cents per hundred, which is less than three quarters of a cent per lb. for milk, and yet over two thirds of Ontario bran is worth $15 a ton, so they get an equivalent of one pound of milk for one pound of bran at Cornell University.

Mr. HOARD.—This result is not at all intelligent. To-day in Wisconsin I can lay my hands on 1,500 private dairymen who are making this result. I looked over the books of Valancey Fuller, who is handling Jerseys. In 1884 the average for 35 head was 6,257 lbs of milk per cow and heifer, with a butter value of 1 lb to 16 lbs of milk, or an average yield of cow and heifer of 391 lbs 1 oz of butter each. Now, that was in a herd of 35 cows. His milking year was ten months. Concerning the value of bran, I think there is a point we do not all understand. Mr. Malcolm spoke of the nutritive ratio, and referred to the fact that the German experimenters, covering 20 years of careful research with over 20,000 cows, discovered certain principles in the animal digestion of the cow towards the production of milk. They were these : that when food enters a cow it is applied in three ways. If the cow is growing as a heifer and is taking up all the food she is fed for the process of growth, she appropriates all she can necessarily for her growth. A cow weighs 800 and that has to be supported every day. That tissue has got to be renewed. That application of her food is called the food of support. Then comes the third use, and that is the food of production. Now, never do you get the food production until you satisfy the first two. A cow is like the Arkansas jury. The Clerk asked, "Do you find for the plaintiff or defendant?" The jury said they found for themselves first. The cow means to do just that if she has a show. In their experiments the Germans discovered that of the two great ruling elements of food, carbo-hydrates and albuminoids, the former or the starchy and sugary matter in animal muscle produces energy and heat while that other property which produces muscle and bone and nerve power is called protein or albuminoid. Now, a cow must have proper proportions in her ration to produce butter and milk—$2\frac{1}{2}$ of albuminoid to $12\frac{1}{2}$ of carbo-hydrates or starchy food. Now, wheat straw is almost entirely carbo-hydrate. It does not give muscle, bone or lean meat, but it gives heat, and if it did not take such a sight of it, it might be fed. But in proportion to its fibre it contains too much bulk. Pease meal, bran and oats contain the other quality which make bone, muscle, nerve, strength and power, and these are called albuminoids. Now, in feeding bran you maintain the strength and nervous power and muscular fibre of the cow and you give her also the proportion of albuminoid for milk. What is milk composed of? Casein is almost the pure protein or albuminoid. Here you give the cow the food which in the nature of the thing she has got to produce, but you speculate whether you ought to give her albuminoid food at all! Butter fat is largely produced from the albuminoids. It is a very subtle, peculiar oil. No oil in nature is like it. Men think butter is made of fat. You may pour all the fat into a cow you like, it will not make butter. She may put it on to her body but never into her milk. I would buy bran if I could not get pease meal or some other food rich in albuminoids if it cost me $20 or $25 a ton. Why? Because I must keep up the body of the animal. A cow making a pound and a half of butter a day is drawing on her system for more exercise of strength and greater exhaustion than a horse drawing a plow from morning to night. Many people are prejudiced against science, yet it is nothing else but a knowledge of facts. That is all. Science is helping us to understand these things. As far as the use of bran is concerned I noticed over 600 car loads of bran were unloaded in Jefferson county last year. The average has been for ten years 300 to 400 car loads, and I notice that the men who buy most bran have the largest bank accounts. I notice another thing, that those men carrying no more cows than their neighbors, perhaps, have the richest land. It has dawned on our people that feeding bran helps to keep a very good soil.

Prof. ROBERTSON.—Let me call attention to one point which has perhaps been overlooked in discussing the value of bran as a milk producing food. I believe there is an immediate return from a cow fed on bran to pay for the bran. Then there is some value in the manure. But there is one advantage perhaps we have not recognized fully in the value given to the cow, and which I call latent power to produce milk on the same food at a later date in her milking season. I give a cow bran in the spring, she gives extra milk and in June when she has lots of good food she gives more milk then on the grass than if she had not got bran in the spring. Then in the after-part of the summer, when the pastures are dry, if the cow gets supplementary food she pays for it in her milk at once. She has also the latent power to give more milk on later pastures afterwards on the stubble or aftermath. So you have really a threefold return, in the increased value of the manure, in the milk and in the latent power it gives her for milk production.

Mr. CHEESMAN.—It seems almost like a waste of time to be continually harping on those Eastern and Western Ontario cow averages. If you look over reports or even statistics you will find the cow of Eastern Ontario has not afforded very much over 2,600 lbs to 2,700 lbs annually and in this part 2,900 lbs to 3,000 lbs. I have endeavored to figure out from what I know of the land the values reported. The Bureau of Statistics give the very low average of 3,000 lbs per cow. Take 5 acres of native grass as the average acreage in summer to support a cow. This in factory districts may be valued at about $30 an acre. Interest at 6 per cent, we have $1.80 for interest of land, or $9 for 5 acres during the season. Estimating that 80c. to 85c. per hundred pounds the price realized by the farmer for milk we have about $24 or $25. That gives him a net return of about $16. Now, if he is able to sustain his cows through the winter season at a cost of about 7¼ cents per day, we find from the $16 there is $13 swallowed up, leaving him a balance of only about $3, which is not sufficient to pay for attendance. A great deal has been said here and on former occasions about the influence of emulation passing from farmer to farmer, of the competition or feeling which exists among patrons and the jealousy one man has of another who is able to secure a higher average than his neighbor, or of one who is able to secure 3, or 4 or 5 cents more for his butter than his neighbor. Although these do exist, I think we have not emphasized or made the most of them. There is no machinery put in force that I know of by Dairymen's Associations for stimulating this emulation between patrons of cheese factories. It is true we have heard by the last paper that Mr. Malcolm and others like him have succeeded in realizing the handsome sum of about $50 a cow estimating the return of 90 cents per hundred for milk on his 6,000 pound average. His success had no great material effect on his neighbors to the extent of inducing them to follow his good example. I think it would be a good plan if the Western Dairymen's Association would institute a series of tests based on the season's average for single cows, or better still, for herd average for that particular farm. A series of prizes might be devised somewhat as follows. A prize might be given to the farmer sending the largest average per cow; another for the cheapest made milk, or the largest quantity obtained from the smallest area. Mr. Hoard will probably tell you that they have a farmer out in Wisconsin, Mr. Hiram Smith, one of the oldest dairymen of that State. I think he farms about 200 acres. He has nearly 100 cows, and he is able to support the whole herd on this area and he purchases bran as supplementary food for them.

Mr. HOARD.—Yes, purchases it with skimmed milk.

Mr. CHEESMAN.—This man has an extreme result. In conversations I held with several of the oldest farmers in this district last evening and this morning I was not able to learn of a patron doing anything better than supporting about one cow for every four acres. If we estimate it at even three acres, and that this land is worth $38 per acre giving food for one cow during the summer season, and that it is cropped mainly in clover, you will find, taking at 6 per cent of the $38, that the outlay for interest for land on this three acre area of pasture is about $6.84. In more than one instance in the province of Quebec, I find that so small an area as this is quite certain to support one cow during the summer season and the common average with many farmers is about 4,500 pounds of milk per cow. Mr. McFarlane, who is one of the oldest cheesemakers

there, told me he had several patrons on his books who were sending at the rate of 3,500 pounds to every cow from grade Ayrshires weighing 900 or 950 lbs. The cows mostly from Shorthorn grades in this district weigh from 1,300 to 1,400 lbs. The difference between 950 and 1,300 to 1,400 lbs is a very serious difference indeed, as the food to support in the latter case is considerably more than in the former. Our friend who last addressed you described in a very graphic way the difference in the two cases of a large and small cow. In Toronto vicinity a few years ago there was a cow in her prime weighing only 750 lbs., six years old, giving 9,000 and some odd lbs in 300 days. It is a matter of great consequence whether a cow is of large or small carcase. And then a prize might be given for the largest milkers. I attach great importance to the length of the milking period. If a competition of this kind were opened among dairymen the details might be settled by a committee appointed from the Board of Directors who would be assisted by the farmers contributing milk to the cheese factories, so there would be no difficulty whatever in arranging the details of the competition. A third prize might be given for cows with a milking season lasting 300 days, 5,000 lbs to be the minimum for that period. A fourth prize might be given to patrons raising their own heifers, and a fifth prize to the best winter milk farmer—that is the farmer raising milk for any purpose other than that of furnishing the milk to towns. It is a very important matter. At this season of the year it is very difficult to get good butter. Mr. Derbyshire says even in connection with conventions that he has never been able to get good butter in the towns where they have been held. I quite endorse his remark with reference to the conventions held in other towns for the last few years; it is fit for anything but for food. You have heard from Prof. Robertson to-day that the cheese exported from the port of Montreal during the past season would require the milk of about 275,000 cows and that 75,000 of these cows really returned to the patrons an average of $36 per cow, while 75,000 returned less than $16 per cow per season. You will see from these figures that if there is realized on the average from cows only 3,000 lbs of milk during a season there must be an actual loss on some by paying out of his profits on the whole herd for those giving considerable less than this. One other matter is the relative value of fertilizers. The reason why these valuations which have been stated over and over again have not the interest for the Canadian farmers they have for the New York farmers and those in Illinois and Ohio, where the consumption of fertilizers is very heavy, although the prices of farm products are not materially different from what they are here in Ontario, is because the consumption of fertilizers in the Dominion of Canada is exceedingly small. I do not think they amount to more than 900 tons annually for the whole Dominion. There are no less than four manufacturers of fertilizers in Ontario, at Smith's Falls, London, and two small ones in Toronto.

The CHAIRMAN.—There is one at Ingersoll.

A DELEGATE.—There is another at Guelph.

Mr. CHEESMAN.—But for all that I cannot get more than 900 tons for the whole Dominion. The question has been raised as to the value of pea straw. Mr. Malcolm told us that seven or eight years ago Joseph Harris stated that bran had manurial residue value equal to $9 per ton. Mr. Hoard says Mr. Smith has demonstrated in his own experience a value of $8. Prof. Roberts told us last week that the manurial residue of bran was $11. Now, I think that men all agree, from facts which have been submitted to us this evening, that bran is a very important commodity, and that if milk producing and cheese competitions are to be encouraged among farmers by your Board of Directors it will have an important influence on the farmers. I know those who follow me in the discussion may object to the recommendation I have made by telling me the Agriculture and Arts Association has instituted a series of competitions in the prize farms. But reflect that the men entering them were men farming under exceptionally favorable circumstances. Competition of that kind would fail altogether to reach the class of farmers we seek to reach, viz., the patrons of factories. We cannot reach them through the factory. If it is done it will have an important bearing on dairy farming in the districts. One of the first effects will be the sowing of a large area of land in green crops as supplementary food for the dry season when the milk begins to fail. Mr. Malcolm

says cows generally begin to fail about the 20th of June, when he commenced to feed bran. I do not know whether he said he had any experience with soiling crops. I have no doubt if a competition of the kind I have recommended were encouraged by the Board, if they were to set apart a sum of about $500 for this part of the country, dividing it up into about seven prizes and giving for each class $50, before another year we should reach some very tangible results such as we have had no experience of hitherto. (Cheers.)

ODDS AND ENDS.

Mr. W. D. Hoard.—My talk is to be about odds and ends. I have two or three points which will perhaps come in place. You know there is a good deal of detail about farm life and about our dairying life. I shall treat for a moment on the care of manure. You remember my saying that for the nitrogen which is in bran you must pay 17 to 19 cents a pound if you buy it. Now, in all our domestic animals this nitrogen passes off through liquid but not solid secretions, consequently we take but little pains to save it. There is not an animal on your farm that does not void a great deal more money value from liquids than solids. Chemical analysis and parliamentary investigation prove it. I will give you a point in my own experience. Last winter I housed in a little stable six cattle and horses. It was a small stable and I knew I was doing something rather dangerous to the health of those animals, but in order to secure warmth I had to put them in that stable. I reflected some time what I would do. I was confronted with the same problem every farmer has to face, "If I keep up the heat of the stable so that the manure will not freeze, if I keep it where it ought to be, the atmosphere will become foul with gas in the form of ammonia, which is a very volatile gas." I said I must have an absorbent. I remembered that land plaster was one of the best absorbents of those valuable gases forming plant food. I bought a certain quantity of this and sprinkled it in the gutter back of the cows and horses in the stables. This manure which was escaping, being so volatile, is worth 17 to 19 cents a pound. In the horse stables, when you shake up the bedding it will rise so powerfully as to make your eyes smart. Now, it is unhealthy for the horses, but if you absorb it it will keep the horses healthy. Last spring I wanted to plant seventy rods with this B. & W. corn. I wanted to put that in because I wanted to raise all the fodder I could for my cattle. I am breeding thoroughbred cattle and wanted to feed them nicely. Now, on that sandy piece of land I want to show you how that land plaster saved for me the nitrogen. I planted in rows 3½ feet apart every 6 inches a kernel. I planted this corn on seventy rods. Then a drouth struck us such as I never saw before. I planted on the 9th day of May. I dragged it two or three times with a revolving tooth drag, and it came on grandly. It seemed to be growing with all the forces of fertility which could be found on the banks of the Wabash. My neighbors came along and said, "That corn is looking fine; what is the matter with it?" I said I did not know. I put on about 16 loads of ordinary green manure, but it was not enough to start the corn right away. I did not think at first of the land plaster in the manure taking hold of that plant food. The drouth went on from about the 20th of May until away along in the middle of August. We scarcely got a particle of rain, yet that corn never knew for a moment there was a drouth on hand. It was a fact that I had provided a very rich necessary plant food to the corn, and by stirring the surface soil constantly I stopped what evaporation there was, and that corn attained great strength and size, and in 60 days I had stalks which weighed, when cut closely to the ground, 10½ lb. I am not drawing the long bow, though my wife said when she married me that she had drawn a long beau. On the 15th day of August I cut that corn, stacked it and let it dry until the 15th November, and took from that seventy rods of ground a little over four tons of cured corn fodder. There is a little of the value of my saving the nitrogen in my stable. Is there a man here who cannot try that this winter? It is just the very thing to perfect in Canada. I have been feeding them corn all winter. It is a large corn, so large it should be run through the feed cutter, but when you do cut it in that way let it heat a little before feeding. You will find the cows will eat the stalks, and are strangely

hungry for them. I finally discovered it was on account of the large amount of sugar in the stalks.

Another point I want to talk on is the value of warming water for stock. I heard John Boyd a number of years ago in the Dairy Convention in Iowa make this assertion, that he found by practical experience that a cord of wood was equal to 200 bushels of corn in dairying. Of course Mr. Somebody said, "How do you feed your cordwood?" In Iowa they are a great set of people to brag. The chairman's statement with regard to my being sensitive over Canada's excellent reputation showed that he did not know where I have been. I have been in Iowa, and I never heard bragging in Canada equal to one-hundredth part of it out there. The man who could stand Iowa could walk over Canada like a seasoned politician. He explained that by warming water with one cord of wood and using it for his cows he derived from them results equal to feeding 200 bushels of corn. It staggered everybody, but Mr. Boyd was right. Many of our men now have water tanks with warming arrangements. For five cents a day with one of those tanks I can warm water for 60 cows to 70 degrees. When a cow goes out you let her drink from those running brooks of ice water. It does not run more than 50 to 60 yards from the spring until it is near freezing point. Now, the cow which has to take that water at 35 or 40 degrees has to warm it up to 98. How does she do it? By the production of heat. Where does she get heat? Out of food. It is the same as my maintaining heat in my body or as fuel is burned in the stove; it is combustion in both cases. If you force the cow to warm the water from 40 to 98 degrees—a difference of 58 degrees—you compel her to do that at your expense. It takes as a result so much extra food and reduces production. I have seen hundreds of cows coming into the stable with their horns shaking as though they had the ague and unable to give much milk, as if they were retaliating upon the owner. This inhumane way of treating our cattle does not pay.

I spoke for a moment on the effect of cold on the milk production. I will give you an instance. W. T. Ames, of Northfield, Minn., produced milk for St. Paul market. He is a very intelligent, kind, observant man. His hired man turned out the cows and a storm came up. Mr. Ames was not at home. They had to endure that blustering, blizzardy Minnesota storm for one hour, and it took from his receipts of milk at St. Paul $200, he tells me, before he got back to the same flow again. Now, that was not because the cows were not hardy or had not good constitutions, but because you cannot serve old Boreas and the St. Paul milk customer at the same time. Now, about the reason of all this. If there is any one thing I have taken pride in since I was a little boy it is ability to raise a calf. When a boy 16 years old I entered into competition over there in Madison County, N.Y., with the neighboring boys as to who should present the finest calves at the county fair. As a consequence there was a great deal of rivalry. I appealed to my father, who had a nice little herd of Devon cattle. I asked him to let me take chances at best. I had to do it through mother. A great many sly tricks are occasionally done on the old man through mother. I had the fortune to have an old English uncle who had been head breeding steward to one of the best breeders in England. He married into our family and we found it was quite a good thing. This uncle said in his broad Lincolnshire dialect, "I will tell you how you can make the boys grow black with envy." I said, "Give it to us, Uncle Tom." He said, "Use skim milk, give it to the calves warm and sweet three times a day, but with the addition of a litttle oatmeal porridge." So I went at it under uncle's tutelage. His principles have guided me ever since in raising a young animal. He says, "You must remember you are treating a little baby. You have a baby calf, he has a baby stomach; he must wait for a good many weeks before he has a ruminating stomach. First is a rennet stomach, then follows a ruminating stomach. His mother lets him suck twelve to twenty times a day. Give him his milk frequently, and give it when warm and sweet." I went at it. Father gave me these calves. We did not know much about handling milk then; we put it in shallow pans. It soured easily. I brought up calves in this way, putting six calves on three cows. I took one dollar's worth of oatmeal porridge. They began to thrive and grow wonderfully, and when the six months came around in September the calves were turned in. I took them to the fair and won the premium, and if there was a prouder boy on this earth I would like to meet him. Next year I won the premium again, and the

judges said that there was some "hocus-pocus." They appealed to my father, who told what I fed them on. I won prizes three years in succession, feeding this way and by keeping them perfectly dry, and I reared them with wonderful success. I have followed that plan ever since, feeding three times a day, feeding warm and feeding sweet, and giving a little oilmeal or a little oatmeal. There is an Englishman by the name of Coppins three miles from me. I was driving by one morning when he asked me to stop; a shorthorn calf weighing twenty pounds had just been dropped. I said, "What are you going to do with it?" He said, "I will keep him for a week or two and then sell him to the butchers." I asked him to keep him four months under my advice. In four months he weighed 420 lb. At the Experimental Station, Illinois, we have remarkable examples of the value of skim milk in raising calves, and I want to call the attention of young men here to it. If they take lessons in this they will find it is dealing with a very profitable part of farm practice.

Now, about the feeding of pigs. Until about three years ago we were saving our pigs over, and fattening at 18 months. In three years time an extraordinary change has been wrought. Our plan is to let the pigs run with the sow three months, then put them in clover, give them skimmed milk, and kill them at 8 or 9 months, weighing 250 to 300 lbs. We are making money on pork bred in this way, while we were losing in the old way. The old way brought us out about 60 cents in debt for a hog.

I went to farmer after farmer and asked at what age a pig returned the largest growth for food taken. The universal idea was that the last pound on a 300 lb. hog was put on cheapest. But I discovered that after 50 lb. weight a pig will return about the largest amount of weight in proportion of food received—that there is a constantly increasing ratio up to about 50 lb., and from 50 to 100 lb. it is a decreasing ratio. In other words, the last pound of a 100 lb. pig cost 10 per cent. more food to make than the 50th lb. did. These experiments were carried out by weighing every week. We discovered that after 150 lb. it costs more to make a pound than at 50; that at 200 it costs 24 per cent. more, and at 300 lb. that it costs 34 per cent. more than at 50 lb. Now as to the value of skimmed milk. We bought 30 hogs, weighing about 150 lb., paying $4.50 a hundred for them. We fed them sour skimmed milk and creamery buttermilk for 56 days. We sold them again for $4.50 a hundred. We fed them on nothing for 56 days but just this buttermilk. We were trying to determine the best food value. The growth those pigs made in 56 days on this food was 22½ cents a hundred for this milk.

Mr. CHEESMAN.—What was the weight when sold?

Mr. HOARD.—I donot remember the figures, but I remember the growth was equal to 22½ cents a hundred in milk.

The Convention adjourned at 10.30 p.m.

THE DAIRY BUSINESS.

Upon the Convention resuming on Thursday morning, Mr. D. Derbyshire read his paper on the Dairy Business.

There is nothing in this country that can approach the growth and progress of Canadian dairying within the last ten years. There was a time when cheese was imported for home consumption, but the magnificent strides of Canadian enterprise soon changed this state of affairs, and our dairymen have just reason to be proud of the record of this department of their handiwork, not alone to the extent of growth and development of the industry, but especially in the excellence of the quality produced. So rapid has the growth been within a few years, that we have more than doubled our exports. Between the 1st of May and the 30th of November, 1887, our cheese exports were no less than 1,104,065 boxes from Montreal, while during the same period of 1877 our exports were only 398,138 boxes, or nearly three times as many in ten years; and I have no doubt that our

exports of cheese manufactured in Canada in 1887 will reach the fine sum of $9,000,000. Surely we should be proud of our business. How small the exports of wheat crop looks in comparison, only $1,575,334 during the same period.

How many dairymen in Ontario sent to the cheese factory the past season 6,000 lb. of milk from each cow kept? How many made ample provision for the exceedingly dry summer by having plenty of green corn, etc., to keep up the flow of milk? How many have warm, comfortable stables, properly ventilated, with an abundaut supply of everything toothsome and nutritious for their cows this winter, such as ensilage, roots, bran, grain, hay, etc.? Are you really following dairying to make money? We have dairymen in Brockville section who are running their business for this purpose, and have made $60 a cow in the factory in 1887, but the average of Eastern Ontario would not reach $27. What a great loss! When you go home will you sell or get rid of your poorest cows, and replace them with the very best that can be had? Raise your own stock as far as practicable, and always remember that it costs no more to raise good stock than poor. Feed regularly and vary according to the season; make calculations to raise a large quantity of corn and roots next season, so that you will have your business flourish even in the dry weather. Be sure and keep your cows in at least one hundred and eighty days of the year. I think there is no place where a cow can be kept so comfortable as in a warm, well-ventilated stable, where the gentle breezes of our winter never blow. Warm the water for them, and do not let them go dry over six weeks of the year, and handle them kindly, treating them always in such a way as to promote quietness and equilibrium of the nervous system.

The proper aëration of the milk is one of the things greatly neglected. Really fancy cheese cannot be made of milk not properly dipped and stirred until the animal heat is out.

Belong to some cheese factory, and if it is not the best in the country do your best to make it so. Do not cut down the price of making, but urge better management in your factories. Insist on having a large fine factory, so that the temperature can be controlled. Over half the cheese factories in Ontario are not fit to make cheese in; a great many have not proper utensils. I beg of you to remedy those things. Elect one salesman and only one, and instruct him to sell regularly and let our English friends know we are regular suppliers of the trade and not speculators.

I wish I could say something that would stir you up and have you double your present yield; for what one man can do, all can do by putting the same brains into the business. Thousands of cows in this leading province are crawling around some wire fence, getting the supposed exercise required, almost freezing to death; and yet their owners pretend to keep cows for making money. Competition will increase from year to year, and unless we increase our facilities and keep pace with the age in which we live, we will be left out of the race.

Gentlemen, will you make an effort in the direction I have mentioned, increase the quantity of milk you furnish to the factory, increase the quality by better cows, provide better stables and give better aëration to the milk. Insist on the factory being the best in the country, and if you have a poor old building in your neighborhood have it torn down and a new one built adapted for handling the milk properly. Get proper machinery and a first-class maker, and have all your energies in the direction of furnishing the largest quantity of the finest quality, and placing it regularly on the market. The business when properly managed is capable of great extension. We have 275,000 cows in the cheese business, but we want to double the yield from each cow. Every farmer can increase the number of cows kept, thereby adding to the fertility of his soil and to his cash account without much additional cost, which increase would be nearly all profit.

We have in Ontario 620,000 cows giving milk; add 100,000 more to our present 752 cheese factories in the Province, and we could economize largely, in drawing, labor, etc.

The same building, if a proper one, could be used for manufacturing the milk of 600 cows, which have only 300 now, and the same first-class man can oversee the making, all of which will add to the profits of the dairyman. We do not want many new cheese factories, but to make those already running proper ones. Out of these we may have a large quantity of fancy cheese to sell each week, which will attract the attention of

the buyers on account of the quantity and quality of the goods. Build creameries in all unoccupied territory, and equalize our products. We want twice as much creamery butter for home consumption, and large quantities for export. By working in the direction I have pointed out, we can have our exports of cheese and butter reach the nice sum of $20,000,000 each year; and so we will be able to hold our present proud position, and lead the world in riches, contentment and civilization.

EDUCATION OF DAIRYMEN.

The Chairman then called on Prof. Robertson to deliver his address upon the Education of Dairymen.

Prof. Robertson.—Let me say that the dairyman's education should be not only practical, but should be also theoretical. It should have for its end not merely the acquisition of knowledge. The acquisition of knowledge should be pursued that it might be of use for the benefit of the man who gets it. Let me give you an illustration from ordinary school education. For what purpose does a boy learn the names of letters? He does not learn to write merely to know that certain lines of certain shapes on certain rules are called by certain names. He learns to write that he may communicate with and receive communication from others and become better acquainted with the world. Now, a man who studies dairying as a theoretical science should not study merely to know a lot of things for the sake of being able to repeat them. He should study it, not that he may know a lot of things, but that he may put them into practice as the boy who learns to write. Too many cheese makers have learned to know things about cheese but have not learned to put them in practice in the making and curing rooms. We want theory, but also practice. A dairyman should be a man not merely knowing some things, with power to remember, but one who is possessed of power to do things. That is the difference between education and the lack of it. Now, professional men need special education in the particular subjects lying along their line of life. I think dairymen should have as particular and thorough a training in subjects lying along their line of life as doctors, lawyers and clergymen. Dairymen need it equally with them and may profit as much by it. The primary purpose of education is to enable a man to make a living. I would not go as far as Mr. Derbyshire and say that the primary purpose of living was to make money. Even as dairymen the primary purpose of education is to make a living, and having made that to earn leisure.

Mr. Derbyshire.—If you have money you will get a living all right.

Prof. Robertson.—Yes, I know that, but there is this tendency in our age which is doing our young men much harm: they are so hungry for having money they have no appetite for being anybody. There is a difference between having a lot of things around a man and having something in one's self. Now, dairymen should educate their members that they may protect their members against every kind of fraud. It is a fraud which leads a man to believe that he can get half a cent a pound more for his cheese by palming them off on somebody while uncured. That fraud should be eliminated by better and higher education. It is a fraud which makes a man content with getting not enough from his cow for her keep to be eliminated. It is doing our business serious harm and should be fought against by higher and better education. Our common school system of education has done a great deal for us. Let me just fix a point here for dairymen. Dairymen say, "I commenced twenty years ago in this business and I had no special education for it; therefore, young men beginning now don't need it." Some men who began life on farms forty or fifty years ago had no special school education. They did not need it; competition was not so keen; the necessities of business were not so great. But no more can they succeed now on farms without common school education than dairymen can. It is a matter of life to the farmer. He requires to know more of the

principles of agriculture. Competition is keener. So the dairyman will find his business increasingly hard, as it unquestionably is. When I commenced some twelve years ago I hardly knew what a floating or gasey curd was, but the last year I made cheese I had occasion to come in contact with them two or three times a day and had them for months continuously. In this way you see there is urgent need for thorough training, for a theoretical education, so that the cheese maker will know what he has to contend against and then be able to cope with the difficulties. Now, the professions manage the education of their members themselves apart from the school system. They encourage and support institutions for this purpose. Why should not dairymen do so among themselves? Dairymen are apt to think a professional man lives on a higher plane; that he requires greater ability, greater intellectual power than they do. I dispute that. A dairyman must of necessity be a business man; he must get a thorough, good business training. If he has not that as a progressive dairyman and comes into contact with su h a well trained business man as my friend from Brockville he would recognize the need for a special business training in order to cope with a man with so clear a head for business. Besides that a dairyman is a tradesman. Still I find that men who hardly know the names of the utensils in the factories do not know how to use their own tools as efficient tradesmen. For instance, they do not know which knife to use first to the most advantage. It is the same as though a joiner would be in doubt as to whether to use the long or small plane first. I find dairymen just as deficient in a knowledge of their tools as I am of the tools for carpentering. Dairymen should be good tradesmen. It should include an apprenticeship to this business. But a man who is merely a tradesman in a cheese factory is never a success, for although a carpenter can cut wood to a given shape and size for a given purpose he has always a similar kind of material and can depend upon it to be in the same condition every day. But the cheese maker deals with a substance which is not so easily managed, and, therefore, when he has to deal with chemical and vital forces he becomes a professional man and he should fit himself for his profession by special education. He may get that in many ways. He may get it by apprenticeship and private study; he may get it by apprenticeship and a course of instruction in a school specially established for this purpose; and a man will be apt to learn more in one week's schooling from a competent teacher than in two years without that teacher. That is, he can get the first principles, and he should know afterwards how to apply them. Then he needs to be specially educated for another reason, because he occupies a most influential position in his own neighborhood. It used to be the understanding in my neighborhood that the cheese maker and young preacher were about equally influential in public affairs. The cheese maker should not only know the trade of cheese making but should be a leader of agricultural thought in his neighborhood. He should make the cheese factory a school house for agricultural education. He should be able to tell his patrons the most progressive methods of all dairying occupations, from the raising of calves and the feeding of cows up to the putting of his product on the market in the best shape. Now if he can tell his patrons how to raise calves well he will encourage them to raise them in spring before the factory opens, and so he will get more milk. He will get better stock in that neighborhood and so he will be working for his own advantage and will be helping his neighbors to do better in their business. His work demands skill of the very highest order. And let me tell you that skill is always the product of education. Let me say a word to master cheese makers. Work in the factory is hard, and I believe it is often drudgery to the learners. Drudgery, however, is only attached to work when intelligent purpose is absent. The master cheese maker should carefully tell his apprentice the reason why and the purposes for which each bit of work is done—and so remove the element of drudgery. By such means the labor would be lightened and sweetened as would be the temper of the man and the master as well as the flavor of the cheese. We have had some good education of this sort in the past. We have had the benefit of this Convention. But that is not enough. Get any well edited sheet bearing on your business as dairymen. Read it regularly, and you will wonder how you did so long without one. Those who have heard Mr. Hoard have no doubt enjoyed his speeches. I have enjoyed the articles in his paper just as much. We have papers of our own. I read with a good deal of enjoyment the series of articles last year in the *Farmers' Advocate* on milk testing experi-

ments. I learned a good deal from my friend Macdonald who wrote them, although I had studied the subject some time. We have the *Live Stock Journal* that looks after the dairying matter very closely from a stock feeder's point of view as well as from a practical farmer's point of view. However, be sure to get one good dairying agricultural paper. The men who need this education most are those who appreciate it least, and while we have had much help from the Convention, those who need help most are those who do not come here. We should then take a step further in our educational methods. We should make the information of these Conventions not merely available to every dairyman but indispensable to every dairyman, carrying light to his neighborhood, and by persistently taking hold of his judgment bring him into contact with knowledge. It is wonderful that the thing which a man should be reaching out for is the one thing we have to drum into him. If a man once gets an appetite for dairying knowledge he will always go where he can get it. When a man thinks that he knows all that can be known he stultifies himself and weakens his usefulness. Let me specify a few of the principal ways in which we could render this education more useful. I think we should organize special dairy classes where cheese making and handling of milk would be specially discussed. At the Convention the time is so short that we cannot discuss these as we would like. One aspect would consume a whole session, leaving no room for other schemes. My plan would be this : That we should hold this spring no less than four, perhaps six, conventions of cheese makers in different sections lasting two days each for the one purpose of discussing dairy practice and cheese making. We should have convenient places and suitable dates. The meetings might be arranged in this fashion : The first day one session might be occupied with describing the use of milk testing instruments. Few cheese makers understand how to use those we have. They know their names but know very little else about them. Then we could explain the coagulation of milk. I have been at cheese making twelve years and I have learned more this last year about coagulation and its value than I ever knew before, and I think I can make better cheese by means of that knowledge. I should be glad to attend those meetings and would hope to get the help of the best cheese-makers there. Instead of long speeches, we could tell experiences and ask questions. The best season of the year would be the month of March. Cheese makers say often, we cannot spare the time or afford the money. Now, if a man is going to make his living by cheese making he can afford any amount of money in reason, in order to qualify himself for his business. To supplement this we should have practical instruction all summer, because after all theory sometimes leads a man to a conclusion that practice may not sustain, because he has not got a right theory. Now practical instruction and demonstration throughout the summer would impress the theory. Theory should not blind us to the facts, or it will become hurtful instead of helpful. Practical demonstration in the summer would enable a man to apply his theory intelligently. In the eastern part of the Province much valuable work has been done. We find competent men have been engaged for several years, and their services are in great demand by cheese makers. They have helped cheese makers all through that section, so much so, that whereas four years ago Brockville was always quoted 1½ cents below Listowel, now the quotation at Brockville is often just a little above Listowel.

Mr. Derbyshire.—Or any other place—anywhere.

Prof. Robertson.—These results are largly due to this system adopted by eastern men. The average price east of Toronto this year will exceed the price west of it by a large fraction of a cent not merely by market fluctuations but before the changed market conditions had anything to do with the question. Now, I think the western part of the province should find work for four men all summer to go around amongst the factories and teach the makers the best methods of doing everything. The cost of these men through the province would be a mere bagatelle compared with the benefit to the industry. Systematic instruction by so many men would at once show its effects on the cheese makers. Frequent visits by a competent outside party would make the cheese maker mind his business better. Some men will work readily all day without supervision, but against four such men I could find a hundred who would do better under it. The purpose of many cheese makers is to get cheese to pass the buyer's "trier" without complaint. We should

have inspectors who if they found the curd sink or any utensil or fixture in the factory unclean would go to the bottom of the business and tell the cheese maker where his defects were and how to get rid of them. The very expectation of an instructor dropping in would make cheese makers do their work better, and we should have better cheese, just by the existence of this kind of inspection. It would have a good effect also on patrons, because if they expected a competent official to come once in two weeks and inspect the milk they would have a wholesome fear that the milk might not be right that morning, and so they would see that it was right every morning. So with the work of instructing cheese makers there could be combined a very efficient system of the inspection of milk, and with economy by having them acting in both capacities. I think you all recognize the need of a more thorough system of milk inspection. We have to protect the rights of individual dairymen as well as the rights of the province as a whole, and stand between him and any man who would attempt to defraud him through the cheese factory. There is nothing will kill out a factory quicker or more thoroughly than that some man is suspected of skimming or watering his milk. The honest and honorable man who would otherwise stand by a factory will at once give it the go-by if he knows that the manager is taking in that kind of milk. The cheese maker, though competent to inspect milk, is not the best man, from his position in the neighborhood, to inspect the milk and carry out a course decided on by the directors or committee. If he turns to charge a patron with being dishonest he is accused of being spiteful or having a sinister end in view. If an outside man were sent who did not know any body, who had no interest or concern in pleasing any one, or offending any one, he could straighten the matter out. I think it is highly necessary to have this system crystalized into an organization for the coming summer. Then we need organization to extend our system of instruction in another direction. Patrons themselves do not need information given wholesale in a general way, but they need a helpful hand in the way of good sound instruction. Many men are willing to do right when they know how to do it. Many men send inferior milk just because they do not know what is the matter or how to mend it. This system of instruction should include the holding of patrons' meetings at every factory, beginning in November. If we could get good meetings all through November and draw out from successful patrons a knowledge of any better method of dairying, they would in turn become splendid instructors of their neighbors in the best methods of producing milk and growing food. Every factory should have one or two of those meetings, and we should have some organization through which they could have some help for getting speakers from outside. Farmers as a rule will not attend a meeting merely to hear their neighbors, while they would to hear strangers. In that way business could be made more permanently profitable to every man engaged in it. We are trying to reach this end by means of Farmers' Institutes all over the Province, but the drift of the Institutes has been more to discuss the cultivation of soil and growing of food for cattle. To accomplish all this we need money, because a man cannot have a good article of any kind or knowledge or instruction on cheese making unless he is willing to pay a good price for it. I am glad your Association here has as much as $1,100 of money that belongs to the dairymen of this Province to be used for their benefit. It will receive a further grant of about $1,500 in a short time, making $2,600. Out of that I think the Association might spend nearly $2,000 the coming season in furthering this work. I know, sir, of no more sensible and profitable way to administer these funds than as I have indicated. In the east the money has been spent in this way in the past. They have no balance on hand but have managed each year to expend their money for such purposes. This year they recognize its value so fully that they have decided to ask every factory desiring such help to contribute $10 from the proceeds of cheese to a fund to be administered along with the association's fund for this purpose. Now I do not think a factory would miss $10 for a fund to be spent in this way. Each patron would not be assessed at a higher rate than from 10 to 25 cents at most, and I do not know the dairyman who would not be willing to pay 25 cents out of the proceeds of his milk, just to know that his factory was being inspected by an outside and competent authority. Thus the improvement and progress would pay us one hundred-fold for all we spent. There would be possibly an increase of price in this way. Now it is not enough that we have a reputation and have realized the

highest price that is going, because if we stay here and other sections go on, instead of being first we will get to be last, even if we don't go back. We have to improve the quality of all the cheese we make and raise the standard up to the highest point for all our factories, else we will be left. We can thus protect ourselves by improving quality and increasing the price. Thus I believe Ontario would get back $1,000 in three years for every dollar spent in instruction and inspection. Directors, salesmen and owners of factories should take this thing up and carry it out. Directors and owners are not expected to be competent cheese makers. As a rule most of the directors would willingly pay $10 out of their pockets just to know that the cheese maker was doing right and that cheese was being turned out of the best quality. Every salesman knows when he goes to market that unless he knows his cheese to be first-class he cannot stick out for the last fraction of a cent.

Mr. DERBYSHIRE.—They all stick out, though.

Prof. ROBERTSON.—If a man could get an inspector to visit his factory once a week, who could instruct with regard to the defects and good points of his cheese, he could make a better sale of his goods. There would be *higher* prices for better grades. Owners and directors should organize this work in their own districts. Of course, great things are made up of small things. I find that if a man tries to help twenty men at once in that direction he does not help any of them very well, but if he makes up his mind to help one man and then another he can help them all in a short time a great deal. Suppose we help twenty-five factories west of Toronto this year, we can help seventy-five next year, and one hundred and fifty the following year, and thus we will soon help all. The vastness of the work should not hinder the association from undertaking its organization. From the dairy department of the College at Guelph we could manage the correspondence as to the collection of the $10 from the factories to the fund to be administered by the Executive Committee of the Association. I have heard it said, I think, that you could get $2,000 more from factories to add to the $2,000 in the treasury of the Association, making $4,000 in all. This would pay for holding meetings, pay for the salaries of good instructors, and pay for advertising the fall meetings. I do not think dairymen could spend $4,000 throughout the Province in any way whereby to get better help than in this way. We have also in view another part of this work by which we hope to help dairymen, that is with reference to issuing bulletins all summer, once a month, calling attention to the best practices for the whole season. The first of these will be supplied free to every factory man or cheese maker applying for them in sufficient number to give one to each patron. We are willing to do that as well as the correspondence. Our institution at Guelph is seeking a chance of serving you in the most effective way. I think we can make you recognize the value of our department there by service rendered Now we can protect young men of our business against the evil influence of the ten dency to despise manual labor, by educating them to understand and appreciate and enjoy their work. I think it becomes our duty to do this and thus counteract this evil tendency, and bring out all the intelligent and intellectual power of our cheese makers. In doing that we will protect our industry, will make more profit and will make ourselves better men. I have pointed out the need of this kind of education, and tried to point out the advantages which would accrue from it, and how it is easily attainable. Now, if we get your co-operation, I think we will make this Convention and Association tenfold more useful than it has been in the past; so that instead of the statement made yesterday being justifiable, that this Association has passed its day of usefulness, we will recognize that it is only entering upon a new era of usefulness, and has renewed its strength. (Cheers).

Mr. MALCOLM.—Further to corroborate the importance of Prof. Robertson's lecture, I might quote the views of that great philosopher, Herbert Spencer, on Education. He qualifies it and says, that which is of most importance and which comes first is that which pertains to personal existence. Now, there is nothing can be clearer than that knowledge of our business as dairymen comes under that head of personal existence.

This is what we do for a living, therefore, according to that great philosopher it should come first, and it is of far more importance to our boys to learn how to raise a calf, as Prof. Hoard mentioned last night, which would take first prize every time, than to learn how high certain mountains of Europe are, or how long certain rivers are. I believe that Prof. Robertson has shown that the kind of education which concerns us most is that which pertains to our well-being and existence, and as dairymen it should come first. There was a little lack in one point with regard to Mr. Derbyshire's speech, perhaps which is forgotten, that is the point of time at which the work of airing and cooling should be done, which is immediately after milking. Do not wait fifteen or thirty minutes before the work is done, or that will double the amount of work required. Now, when we are beginning to keep cows more in the stables than we used to do, it is important that we should remember that directly the milk leaves the cow it is beginning to be contaminated by the odors of the stable. The stable should be well ventilated, and the milk should be taken immediately out into the open air to be aërated and cooled and to get the animal heat out of it.

THE MARKET, AND THE HOME MARKET.

Mr. Derbyshire.—There should be regular suppliers of the trade but not speculators. Butter which Mr. Hoard sells for thirty-two cents will sell at New York and Boston for forty cents; they are bound to have it; but if we educate people to a high standard of taste we will create a home market. If you once get the people to eat a high quality of butter they will never eat stinking stuff again if they have to pay sixty cents for the good article. The United States used to be large exporters of butter, but now they do not export, now they have home consumption. The reason six cheese used to be consumed to one to-day is because you sell the poor cheese at home. That is the way they do in Brockville, but it is to our disgrace. The finest goods made should be sold to the people here, so they will demand the best quality. Over one half the factories in Brockville are not fit to make a solitary box of cheese. I would like to clean them out. They don't get hold of or belong to this progressive age. If they have not money to build a factory they should borrow the money; they will make it in two years by having the proper facilities for handling the business. It is presumption for a man to ask you to send your milk to him when he has not proper facilities to handle it. We must weed these creatures out. Weed them out, and then take hold of the factories under the union plan, and let us get a proper man who will give you the best factory, the best implements and one who can make the nicest goods and place them regularly on the market. We can beat the earth to-day if we follow that plan, I know we can.

The President.—Mr. Derbyshire touched yesterday upon a point with regard to special factories being able to sell their cheese at exceptional prices. I know buyers are blamed for paying a price to one factory and not giving it to others. Now there are special factories well known in England. There is no reason why ten times more should not be known if we took some pains to inform them. An order will come for 1,000 boxes from a certain factory. Sometimes you have no limit of price with the order, and sometimes you have. Because one man can get 10 cents and another man gets an offer of 9¾, the man who refuses 9¾ never made a bigger mistake than by not selling, because the market may depreciate, and when the cheese is right, and sold for the best obtainable price by selling at the proper season it prevents panic prices prevailing.

Prof. Robertson.—I endorse what the President has said. If a salesman refuses to sell, expecting to get a higher price later, and does not get that price, his patrons will blame him ten times more severely for missing it than if he had sold and the market had gone up afterwards. If I were a salesman, I would sell when I got a good price, because if I got a higher price by holding for a market rise, the patrons would not give you any thanks anyway. If a higher price is realized and the cheese has been kept too long, so that it is off flavour, a pound will block the consumption of about three pounds of a good article. I would like this Convention to take some action with regard to this educational project I have tried to outline. I do not think we should allow it to drop merely by

having a statement of certain good methods laid before you. I was speaking in hopes that some action would be taken by the executive committee to carry out the matter.

Mr. HOARD.—I was impressed with your idea and the remarks you made with regard to home consumption. We are struggling with the problem in the United States just as much as you are here. A cry goes up almost as great in the United States as it did from the children of Israel to "Give us a king." Our people are clamoring "Why don't you give us some cheese we can eat?" I don't think there is a set of men on God's green earth who are so stupid as cheese men. (Laughter and cheers). Now you have got it square in the teeth. I never saw a set of men that when a man asked them for bread they would give him a stone, and then damn him because he didn't like stones, as cheese men do with respect to this question of home demand. You remember the great drop of the spring of 1879. While cheese was selling for 6 or 7 cents, they were selling in our little town for 12½ cents. People become clamorous for cheese, but when it come to forcing a lot of indigestible curd into consumption the people would not stand that. You have not half appreciated this home market. You are making a class of goods which nobody can eat without sneezing. I do not say you are not making some fine goods, but it is the same with our own. With all our talk and hard work we make 58,000,000 pounds of cheese and only 28,000,000 pounds are first class. This home consumption business is wonderful. A man jumped up in our state convention last winter when I was bringing out facts about the considerable difference in different towns of our state and said, "Supposing everybody made good butter, where would the market be then?" I think a few of us are administering our force in bluster. Everybody is afraid the dairy business is going to be over done: there is only one thing there seems to be no serious disposition to question at all, and that is the increase of population. Now, when you reflect that the cows of Wisconsin increased only five per cent. annually for twenty years, and that the population increased twelve per cent.; when you realise that the population of the United States is increasing at a much larger ratio than the cows, there does not appear to be much danger in that respect. Supposing everybody did resolve to-morrow morning in Canada to go into dairying, would it add one cow to the lot? No; it takes two years to make a cow. When the man asked what we would do if everybody made nice butter, I did not tell him, but I could tell him there would be ten pounds eaten where there is one to-day. We started our little creamery handling about 1,000 lbs. of milk a day; we have 6,000 lbs. now, and the creamery is supported in our own town, and we have a large number of private butter makers in that town besides. We hold the butter at the highest Elgin prices; we get a little above Elgin prices. We had 32 cents. a pound from quite a number of firms in Fort Atkinson, because they could get it every morning, and get nice butter. They will come over and buy our butter when they can get good, fair farm butter for 23 cents or 24 cents. So with cheese and everything else. Quality controls the price.

Mr. CASSWELL.—Professor Robertson's remarks on the necessity of the salesmen becoming educated and posted so as to be able to meet so sharp and expert a buyer as Mr. Derbyshire, puts me in mind of a speech of the late Mr. Willard, when he first attended our Convention in those early days. He gave us much very valuable information, and said the time had come when factory men, and especially salesmen, should get information from European and eastern markets weekly, so as not to be taken advantage of by those sharp and well-posted cheese buyers. I told Mr. Willard that if he was acquainted with cheese men as well as I was he would not require to make such a remark, for as a rule they were the shrewdest, best posted men in each district of the factory they represented, and fully competent to take care of themselves and the product put into their hands for sale. Mr. Casswell then proceeded at length to point out the advantages of a regular weekly sale of cheese, so that summer cheese should not be in the way of the fall article. He pointed out that cheese should change hands as promptly as possible, so that the buyers would always have a fresh, inviting article, and thus an increased demand would be cultivated for cheese. By developing this home market the consumption would increase fourfold in a short time and the price of the article would be kept up, as makers would not then have to depend almost entirely upon the export demand.

RESOLUTION ON DAIRY EDUCATION.

Mr. J. B. Lane.—Mr. President, with your permission I shall move a resolution. I may say that I endorse Prof. Robertson's address. I have advocated for years that the principal thing we want is instruction among our dairymen. As one who has handled milk for twenty-five years I have seen the effect of bad milk so much that I am convinced something should be done. At our annual meetings I have always endeavored to point out to patrons different ways to take care of their milk, and urged them to try to send us better milk. And I think this move is in the right direction. I may say, as you are aware, the Dairyman's Association took this matter up and discussed it on the line of my resolution. But it takes money to do all those things; we could not see our way clear for funds or it should have been going on. A proposition was made, however, that we should ask the Government for more funds to assist us, but the majority did not think it wise to do that, and perhaps it is better it has gone as it has. We talked of the $10 arrangement, but it was doubtful if that could be carried out. I believe it can. Farmers are as a rule slow to take hold of these things, but if you press it upon them and show the necessity they are willing to act. I move the following resolution:

That the scheme for the further education of dairymen as outlined by Prof. Robertson's address be accepted as worthy of our endorsation, and that the directors of this Association be instructed to take steps to secure the services of competent cheese instructors and milk inspectors; that we invite the co-operation of the Dairy Department of the Ontario Agricultural College, and recommend that patrons of each factory be urged to contribute $10 each to the funds to be administered for the foregoing purpose.

Mr. John Symington seconded the resolution, which was adopted.

The Convention adjourned at 1.30 o'clock.

AFTERNOON SESSION.

Upon the Convention resuming the Chairman asked if the nominating committee were ready with their report. As they were not, it was decided to go on with Prof. Robertson's paper on "Cheddar Cheese Making." Following is the paper:

CHEDDAR CHEESE-MAKING IN THEORY AND PRACTICE.

In all efforts at instruction, he only is a safe teacher who draws a clear line of distinction between his knowledge of facts and his theory about the facts, or his opinion as to the theories. Most men have clear and definite knowledge of many facts, who still stumble with childish weakness when they attempt explanations of their theories. Yet a proper understanding of the underlying principles that govern changes in any product which is being manufactured, enables the workman more intelligently and therefore more successfully, to apply any method that may be recommended and described.

For that reason I will try to further explain the theory of Cheddar Cheese-making before I proceed to present a statement of the details of the best practice, to the younger and less experienced makers of this convention and association.

Long experience has demonstrated certain methods to be well adapted to the certain production of desirable results, when the milk is all right. But as the raw material of the cheese maker, the milk of cows, is seldom in precisely the same condition of quality upon two consecutive days, he should be able to intelligently modify the details of any method to meet the peculiarities of the milk he handles.

And as the work of dairying becomes extended, it seems that milk has new parasitic foes. Some taints are growing indesirably common. Gasey curds, which years ago were the rare exception of a well managed factory, are now so general that few factories are without them from July till September. There is an ever-increasing need for the cheese maker not only to know the routine of the best processes but to understand the "whys," "wherefores" and "whens" of all the parts thereof.

As related to the food consumed for its production, and to the conditions under which it is ordinarily given, milk is perhaps the most variable of all the animal products. The milk of cows in the best of health, fed on the most suitable of feed, and with every condition and influence favorable for its production, is a most complex compound of compounds. Dissolved in about eleven times their weight of water there is a mixture of casein, albumen and sugar, which holds in suspension from 3 to 5 per cent. of butter-fat in the form of small globules, from one three-hundredth to one thousandth part of an inch in diameter. Such in a sentence is milk as the cheese maker needs to know it. Besides its inherent tendency to decay, milk is a liquid most susceptible of contamination by any impurities that may be adjacent to it. It offers the many germs of destructive ferments with which the ordinary air swarms a most inviting and favorable field for their multiplication and operation. Hidden beneath the evident purity of its snowy froth float the agents that immediately begin to work for its decomposition. Other organisms that live by its destruction are sown into it ere ever the tiny stream from the milker's hand strikes the pail. This, then, is the perishable compound, at its best, which it is the cheese maker's business to preserve in a palatable, nutritious condition at its best for adult human food, conveniently prepared for transportation.

Simple evaporation to dryness would provide conditions conducive to long preservation ; but the cost of that process interferes, and condensed milk as a food finds a rather limited market.

The reduction of the bulk of the milk by the separation of part of its water is the first essential step in the process of cheese making. This should include or be followed by such a treatment of the portion retained for cheese as will make it most valuable in the food markets.

Only two methods of removing part of the water from the milk are known to be practicable. By evaporation, the moisture may be separated in the form of steam. By rennet coagulation, parts of the milk—mainly its casein and part of the fat which the casein envelopes are separated from the water—(although still mixed with it)—which still holds the albumen and sugar in solution. The nature of such coagulation, to put it in other words, is to solidify the curd of the milk out of its state of solution in the water of the milk. Such solidifying or coagulation of the casein thereby encases in it the globules of fat suspended in the milk. After the rennet coagulation is perfect 100 parts of the contents of the cheese-vat may be described as

92 parts liquid composed of	87	parts	water.
	4½	"	milk sugar.
	½	"	albumen.
mixed with 8 parts insoluble curd, composed of	4½	"	casein.
	3½	"	fat.

These two composite parts of coagulated sweet milk are together really as a mixture of two compounds. The means whereby the separation as to contact is to be effected may be classed as mechanical or physical and vital or chemical.

The mechanical means includes the cutting of the curd to facilitate the passage of the liquid portion—the whey—out through the insoluble mixture of casein and fat. There is apparent need for perfect coagulation, before the cutting is commenced. The casein should be completely separated—coagulation is separation—from the liquid portion and the fat globules will be firmly held while the watery compound—the whey—is being separated out from contact with them.

The cutting should be fine enough to permit and promote easy and sufficient separation without disturbing or destroying the physical structure or texture of the curd. The watery compound, or whey, is then filtered through the structure of the casein and out through the forming skin of each particle.

Stirring of the curd is undertaken to hasten and help the separation. Heat is applied to complete the coagulation, the "firming" and the separation, the "drying" or cooking. Temperature over 98° leaves the casein less suited for the solvent action of subsequent fermentation. Sufficient moisture should be left in contact with it to permit of all the casein becoming easily soluble and diffusible.

Among the vital or chemical means used to effect this separation between the soluble and insoluble is the development of lactic acid. Its presence renders the casein less soluble. At the same time it promotes separation of the whey out from the particles of curd. When acid is developed to excess the cohesion of the molecules of the curd is weakened. Lactic acid prevents the development and operation of the putrefactive ferments. It also makes slow the process of curing—fermentation by which the casein is made soluble in the cheese. The degree of acid development will not be excessive if the separation of the whey out of the curd be well effected before it begins. The addition of salt arrests the action of the lactic acid on the curd. It also retards the curing fermentation. In the autumn months there is need for the addition of more salt than during the summer. Such extra salt will give a full flavor, a safe keeping flavor and a slow curing, firm body.

In barest outline I have touched upon the theory of Cheddar cheese making. I have supposed the milk to be in its normal or best condition—good, pure, sweet and from healthy cows. Much of the milk offered at cheese factories is not of that quality. If the milk be in a tainted state when drawn from the cow, the taint will be due (1) to volatile oils from her feed ; (2) to the presence of ferments—vibriones—from putrefactive germs in the air, the water or the feed ; or (3) to disease in her body.

Aëration of the milk is good treatment in all of these cases. By dipping, pouring, stirring or any other method of aëration, objectionable volatile oils and the animal odor are evaporated. The presence of oxygen from the air prevents the vibriones from becoming active. There is very much advantage from the aëration of all milk, especially so when milk is tainted. Cooling milk prevents the vigorous or quick action of the microbes that split the sugar into acid, and it also retards the action of other ferments. Age permits the preparation of the milk for ready separation of the solids from the watery portion by promoting to a helpful degree the energies of the lactic ferment. Tainted milk is with much difficulty coagulated. I do not understand why, but I think that part of the casein has been decomposed by the microbes, the cause of taints. I have learned to use an additional quantity of rennet in such milk. Putrefaction of casein or any nitrogenous matter which is not coagulated is very easy and rapid. Bad odors and bad flavors always result from such decomposition. Often cheese goes off flavor from the imperfect coagulation of the casein.

Let me now give in concise form the details of the best practice I know as embodied in the following hints:

1. Use every endeavor to educate your patrons how to produce milk of the best quality, with the most profit.

2. Give each one a copy of "Points for the Attention of Patrons of Cheese Factories."

3. Carefully inspect the milk cans, especially the seams inside the covers, once every week ; any offensive matter appearing yellow when wet with milk is most dangerous to the flavor and keeping qualities of the cheese.

4. Insist on a careful straining immediately after milking.

5. Send a circular or note to every patron two or three times a year, urging care in the airing of all milk.

6. Visit promptly the farm, pasture, stable, milking-yard, milk-house and milk-stand of every patron whose milk comes tainted, after he has been notified of its bad quality ; some apparently trivial matter that has escaped attention will generally be found as the cause.

7. Where whey is returned in the milk cans urge the owners to empty them as soon as received, and not to feed the whey near a milk-stand, milking-yard or other place where milk is kept.

8. Examine carefully the inside and outside of the opening from the weighing can into the milk conductor, and just after using look into the conductor very closely for any traces of the yellow matter referred to in No. 3.

9. Do that every day.

10. Entertain a 'creepy dislike' for the use of a strainer, cloth, dipper, pail or thermometer which feels greasy, or that has a miser's store of matter-out-of-place in the corners.

11. Lift the pans of the milk vats out of their places for a thorough cleaning of the water-pans once a fortnight.

12. 84 or 86 degrees Fahr. are satisfactory setting temperature when the milk is in good condition.

13. Over-ripe or acidy milk may with advantage be set as high as 96 degrees, according to the degree of its ripeness. See also 31.

14. Let the milk be well matured by the retention or application of heat before the rennet is added.

15. If the milk is delivered to the factory in too sweet a condition it should at once be heated to 94 degrees and frequently stirred.

16 According to the degree of its sweetness it may be left to gradually cool down to 88 degrees during 2 to 4 hours.

17. The addition of sour whey to hasten the maturing is most objectionable and should never be resorted to.

18. Old milk which has become well ripened and nearly sour to the taste may be added, but loppered or thick milk should never be used.

19. In the use of coloring, the annatto extract should be diluted to the extent of one gallon of water to every vatful of milk, and then thoroughly stirred in.

20. Pure rennet extract or powder of *known* strength is indispensable.

21. The quantity used should be regulated according to the condition of the milk.

22. Rennet should be diluted to the volume of at least one gallon of liquid for every vat before being added to the milk.

23. The first discernible action of rennet is to coagulate the milk into curd.

24. To perfectly coagulate the milk from fresh calved cows more rennet is required than later in their milking season.

25. The more rennet there is used the more moisture will there be retained in the cheese under similar conditions of making.

26. The more moisture there is retained in the cheese the more quickly will it cure under equal condition of temperature and atmosphere.

27. For spring cheese as much rennet should be used as will thicken for cutting in from fifteen to twenty minutes at a temperature of 86 degrees.

28. For summer and fall cheese forty-five minutes should be allowed for the same process, with milk in good condition.

29. The second evident action of rennet is to effect a separation of moisture out of the curd particles.

30. The raising of the temperature up to 98 degress Fahr. provides increasingly favorable conditions, and thus promotes the rennet action.

31. When milk is over ripe or acidy, a proportionately increased quantity of rennet should be used to effect a sufficient separation of the moisture from the curd (often termed "cooking") before the presence of lactic acid is perceptible to the taste or smell, or is discernable by the hot iron test. See also 13.

32. Observation of the foregoing would remedy many so-called mushy curds and avoid the danger of leakers.

33. Rennet should be diluted to the volume of at least one gallon of liquid for every vat before being added to the milk.

34. It should be thoroughly mixed by vigorous stirring, otherwise coagulation will be very imperfect.

35. The results of late investigations recommend an allowing of the curd to become fairly firm before commencing to cut, except in the case of a quick curd.

36. More moisture is retained in the cheese, and a better yield is thus obtained. See also 26.

37. The horizontal knife should be used first, lengthwise, and then followed by the perpendicular knife, crosswise, after the whey has separated to half cover the curd.

38. The mesh of the knives should be so close that three cuttings would suffice, except in the case of a quick curd, which should be cut unusally fine.

39. The knives should be moved fast enough to prevent much disturbance of the curd by pushing.

40. After coagulation is perfect the curd should be cut finer during the late fall than during the summer months.

41. Gentle and slow stirring should begin immediately after the cutting is completed.

42. The hand should be used to free the sides and bottom of the pan from any curd that may have adhered.

43. The application of heat should be delayed for fifteen minutes after stirring is commenced.

44. The heat should be applied through the medium of warm water to avoid scorching of the curd.

45. The temperature should be gradually raised to 98 degrees Fahrenheit at a rate not faster than one degree every four or five minutes.

46. In the case of a quick curd, Nos. 43 and 45 may be disregarded.

47. Pains should be taken to make the curd particles so dry, before the development of acid is perceptible, that after being pressed in the hand and released they fall apart when slightly disturbed.

48. Stirring should be continued till the curd is properly "firmed" or "dried."

49. The temperature should be maintained at 98 degrees until the whey is drawn off.

50. When the hot iron test shows fine hairs, from $\frac{1}{4}$ to $\frac{1}{8}$ of an inch long, the whey should be removed.

51. If acid is discernable by the hot iron test before the curd is so properly "firmed," the whey should be immediately removed and the stirring continued till that firm condition is brought about.

52. In both cases the dry curd should be kept at a temperature above 92 degrees Fahr.

53. The presence of too much moisture in the curd *while the acid is developing* is the cause of tenderness of body and pastiness in cheese.

54. If the temperature be allowed to fall below 92 degrees the development of acid is retarded and excessive moisture is retained in the curd during its development.

55. The presence of such extra moisture in the curd at this stage will leave the cheese with a weak or pasty or tallowy body, according to the degrees of acid development permitted.

56. A rack placed in the vat seems the simplest and most effective provision for keeping the curd warm without risk of scorching.

57. Just after the removal of the whey the curd should be hand-stirred till the free moisture has drained off.

58. *After the curd is dry or firm enough, but not before*, it may be allowed to mat into one mass.

59. It should be freqnently turned and packed close, till the layers of curd are four or five deep.

60. Whey should never be allowed to gather in small pools on the curd at this stage.

61. The close packing in layers four or five deep with frequent turnings prevents the outside of the matted pieces from becoming chilled or more deeply colored than the rest of the curd.

62. The conditions of the curd, as to when ready for cutting and salting, are best ascertained by the use of the senses. The usual order of reliability for that purpose is by touch, smell, taste and appearance.

63. The proper degree of change has taken place when the curd feels mellow, velvety and greasy; smells like new-made butter from sour cream; tastes aromatic rather than sour, and shows a texture passing from a flaky or leafy into the stringy and fibrous.

64. When the curd is gasey or very porous, souring should be allowed to go further before it is arrested by the cutting and salting.

65. If the curd be too moist or soft it should be cut or ground at a rather earlier stage, and hand-stirred sometime before the addition of salt.

66. In both of those cases it should also be well-aired by stirring before being salted.

67. It is generally beneficial to stir the curd for ten minutes after cutting or grinding before the salt is applied.

68. The results of the tests made during the season of 1886 for the Western Ontario Dairymen's Association, indicate that Canadian salt is better for cheese-making purposes than English salt.

69. One pound and three-quarters of pure salt per 1,000 pounds of milk is a maximum quantity for April and early May cheese.

70. From two pounds to two and three-quarters pounds of salt per 1,000 pounds of milk is the range for summer use on fairly dried curds, and from three pounds to three and one half pounds during October and November.

71. Where extra rennet has been used or where the curd is sloppy, a corresponding increase of salt should be applied.

72. One important action of salt is to dry the curd and cheese, and thus retard the curing.

73. The curd should be hooped and pressure applied within twenty to forty-five minutes after the salt is stirred in.

74. Delay at this stage or coldness of curd destroys the desirable rosy flavor and imparts to the cheese the bitter taste of the salty white whey.

75. Immediately after the application of salt the pieces of curd become harsh and gritty on their surface; then in from fifteen to twenty-five minutes the harshness gives place to mellowness and the salt causes the whey to separate freely.

76. Pressure in the hoops should be continuous, at first light and gradually increasing.

77. The followers should be loose-fitting, and canvass press rings used.

78. Particular care should be taken to use only pure, warm water when turning the cheese for bandaging, before the rinds are fully formed.

79. Greasy water is sure to percolate into the body of the cheese and leave nasty flavours.

80. The curd cutter or grinder must be thoroughly cleaned every day: wretchedly bad flavors are frequently sown into cheese from neglect of this.

81. Curd sinks should be furnished with racks having slats bevelled to an edge from both sides.

82. The racks need thorough scrubbing on both sides every day, and should be turned out for airing over night.

83. A sink cloth that shows clogging by yellow matter should be burned at once.

84. Occasional soaking over night in a strong sal-soda solution is beneficial.

85. The curd whisk has been a fruitful scatterer of bad flavors; a hair brush is more easily kept clean.

86. The hoops and press tables require to be rinsed with hot water every day and scrubbed on both sides.

87. All cheese should be turned in the hoops in the morning to give finish to the shape and body.

88. The press cloths should be left on for a fortnight, or till within a few days of the time of shipment.

89. No cheese should be taken to the curing room till the shape is true and the edges well made.

90. The cheese should be turned on the shelves once a day till at least three weeks old.

91. The curing room floor should be frequently swept, the shelves thoroughly cleaned after each shipment, and the air kept pure by suitable ventilation.

92. The curing is effected by fermentation, while heat up to 70 degrees makes a favorable condition, and cold under 60 degrees an unfavorable condition for its operation.

93. A temperature of from 70 degrees to 75 degrees Fahr., should be maintained for curing spring cheese.

94. From 65 degrees to 70 degrees Fahrenheit is the best range of temperature for the curing of summer and fall cheese.

95. In the curing room a temperature of from 65 degrees to 70 degress should be maintained continuously.

96. Where the room is heated by a stove the following simple device will help to equalize the temperature over the whole and save fuel:

97. A tin jacket should be placed so as to surround the stove at a distance of eight inches all around.

98. Let the jacket stand eight inches from the floor and extend eight or twelve inches above the stove according to its size.

99. A light rope attached to the jacket and then passing around a pulley fixed to the ceiling will provide for its being lifted out of the way when fresh fuel is being added.

100. The air between the stove and the jacket on being heated at once ascends; the colder air from below is drawn up, and a continuous movement of warm air along the upper part of the room is established away from the stove, with the complementary circulation of colder air, near the floor, towards the stove.

101. When press cloths are stripped off, use warm (but not hot), pure sweet-flavored grease on the rinds.

102. Just before boxing summer cheese grease them, and apply scale-boards while the grease is still soft.

103. Mark the weight of each cheese in neat figures on the hollow side of the box.

104. Let there be two scale boards on each end of the cheese in the box.

105. The edge of the box should be level with the cheese and the cover should fit close.

106. The band of the box cover should be at least $\frac{1}{4}$ of an inch thick to give additional strength to the package.

107. Insist on the teamsters using only clean wagon or sleigh boxes in which to take cheese to the railway station.

108. See that the flues of the steam boiler are cleaned out every week.

109. *Finish all of every day's work each day, in the very best way you can.*

110. Keep everything in and about the factory scrupulously clean.

111. Keep a correct and detailed record of every day's make.

112. Occasionally compare the working of your factory in all its details with the foregoing recommendations.

ELECTION OF OFFICERS.

Col. CAMPBELL.—The nominating committee beg leave to report. I may say the committee on nominations has considered and re-considered every line, and are now prepared to report. The difficulty, as you know, is not to get a first-class president and vice-president and other officers. The report is as follows :

President..... R. Cleland, Esq., Listowel.
1st Vice-President .....E. Casswell, Esq., Ingersoll.
2nd Vice-President.....J. B. Lane, Esq., Dorchester Station.

District No. 7, comprising Wellington, Waterloo, Wentworth, Halton, Dufferin and City of Hamilton, John Prain, Esq., Harriston.
District No. 8, comprising Lincoln, Welland, Haldimand and Monck, Frank Spratt, Esq., Port Maitland.
District No. 9, comprising Elgin, Brant, Oxford and Norfolk, B. Hopkins, Esq., Brownsville.
District No. 10, comprising Huron, Bruce and Grey, William Messer, Esq., Bluevale.
District No. 11, comprising Perth, Middlesex and City of London, T. Ballantyne, Esq., M. P. P., Stratford.
District No. 12, comprising Essex, Kent and Lambton, Wm. Symington, Esq., Camlachie.
District No. 13, comprising Algoma, Simcoe, Muskoka and Parry Sound, James A. Blain, Esq., Gilford.

Col. Campbell moved the adoption of the report, which was seconded by Thos. Davis.

The CHAIRMAN.—You have heard the report. It is now for your adoption or rejection. I beg to say I quite fall in with the remarks of Col. Campbell, that all men cannot be presidents. It has run in one or two names for many years with one exception. I think it is a move in the right direction in changing from business men to farmers and dairymen, and then it will allow every man a chance to become president and vice-president in his turn. I have been connected with the Convention, with my friend Mr. Ballantyne, for many years, and I have done the best in my power and ability to carry out everything that might be in the interests of the Convention, many times at our own expense and many times to the injury of our own business—or, at least to the injury of mine—giving time when I should not have done so, as I have done this week, and I think you will all say I have tried to do the best I could for the Convention to-day. To further Col. Campbell's wishes and give every man a chance, I ask you to take off my name as 1st vice-president, because I have made up my mind there are other men just as good and the work must be carried on by others when we leave, and I will become a plain member like the rest of you. Therefore, before putting the motion it will be necessary to nominate another man as 1st vice-president.

Mr. DERBYSHIRE.—You may think I am an outsider and have nothing to say. I am a member of this Association. I have just paid my dollar a few minutes ago so that I would have an opportunity to speak at this meeting. We have had a great deal of experience of this very thing in the east. We adopted a system and tried to carry it out as far as we possibly could in this direction : that the oldest director should become 2nd vice-president, then the 2nd vice-president in his turn the next year should become 1st vice-president, and then in his turn the next year he would become president, and in that way he would become schooled for the position of president. You are all aware you cannot jump a man right from the floor into the chair and expect him to handle this position as president of an important Association like this with the same ease and ability as he could if he had gone up from a director to 2nd vice-president, then as 1st vice-president and then as president. Mr. Casswell, as I understand, was one of the parties who insisted on the convention going from his locality, where he could be elected, to this place, where he can be defeated. Now, I think, out of courtesy to Mr. Casswell, the smallest thing you could do at this time would be to elect him as president and Mr. Cleland as 1st vice-president. It will be quite a jump for him, and I think it is only fair and right he should get there because he has been an active man in the association, and has shown fine ability at this meeting. Now you do not want to cuff Mr. Casswell to the floor in this way from this position and lose his services. I think it is only justice

to Mr. Casswell, and for the good of your Association and in the interests of good feeling afterwards that you should amend this report; and as I am a member and one right here among you, having paid my dollar and having the right to speak, I move that the report of the committee be amended by putting Mr. Casswell as president and Mr. Cleland as 1st vice-president, and that the report as so amended be adopted.

Mr. J. W. Montgomery seconded this amendment.

The Chairman.—I want no vote in this meeting, nor will I allow it; for Casswell shall be the same as other men. If he is president he shall be so unanimously without any voting. I will never divide the house. I ask you to take my name off the report.

Rev. W. F. Clarke rose to speak, but the chairman asked the secretary to take the chair.

The Chairman.—I do not want it said Casswell caused trouble. I will never ask a man to speak or vote for me. I will not allow any man to say I spoke to him about the officers of this convention. If the convention sees fit to elect Mr. Cleland I will help to elect him.

Rev. W. F Clarke.—I have been present on occasions like this when there was behind the scenes an effort going on, as Mr. Derbyshire said, to push men on to office. It is usually considered that there are certain gradations by which men climb up to the highest office in these associations, and it has long been a time-honored custom that a man who has been 1st vice-president shall be president. Now, I wish you to understand I have no personal feeling whatever in this matter relative to any gentleman, but I have seen so much friction, so much injury done by such an effort as is now attempted to be made that I plead with you to be at peace.

Col. Campbell.—My own impression is that Mr. Casswell never stood before the Convention as high as he has the last few days; that he never stood higher before in the Convention than he stands here at this moment, and any action the committee has taken has not been with reference to injuring or hurting his feelings. The committee knows Mr. Casswell very well and knows the good he has done to the country probably as well as Mr. Clarke does The members of the committee who selected Mr. Cleland were not Listowel people at all, and if Mr. Cleland has been looked upon as the person for this work it is probably for reasons of this kind—as Mr. Casswell has well put it—that during the season when people like Mr. Casswell are buying cheese, anxious to promote their own interests, they have to sacriffce a great deal of valuable time in devoting time to public business, whereas Mr. Cleland could devote that time to it without injuring his own business.

Mr. Casswell.—It is a great wrong to take up the time of this Convention quarelling over who shall have the position. I do not want it; I will not take it. I will never have a vote taken.

Mr. Cleland.—I think it is due to myself to say a word or two respecting this matter. Mr. Casswell is the first man who ever asked me to become president of this Association some years ago. I have never wished to be president. I never asked a man's vote, I never knew about it until I was privately asked if I would accept it. I said if it was the will of the Convention, the unanimous wish of the people that I should be president, I was perfectly willing to accept it, but further than that I never asked a man's vote. As far as the cheese interests is concerned I speak within the truth when I say I am the oldest cheese maker in this part of the country. I commenced here 17 years ago, and I have the only factory running now that was running then. I leave the matter entirely in your hands. I shall not move in the matter, but abide by the result.

Mr. Derbyshire.—I ask this meeting to take into account the services Mr. Casswell rendered this Association. Mr. Cleland should wait until he becomes a little further educated in the business, and we will put him in as president next year if necessary.

The Secretary called on members of the Association to vote on the amendment, which was carried amid loud cheers by 65 to 3.

Mr. Casswell.—Before making my speech I just say I can shake hands over this affair. I was determined I would not say a word about this presidency, and after what Col. Campbell said I thought I would withdraw and allow everybody to go in that wanted to. Of course I think it was nothing but right and courteous of the people of Listowel to elect me president for what I did. Mr. Ballantyne wanted it last year because there were certain things to be carried out which he thought he could do, and a very good president he was. I wish he was present to-day. I thank you very much for the honor you have done me, especially for the action taken by some. Now, let the matter drop; let us work for the interests of the Convention. It is a very responsible position. I know that Mr. Cleland or fifty other men would conduct the business as well as I could. But you have elected me, and I will accept the office, if circumstances will allow, for this year, and will do my best if I am put on the nominating committee to put Mr. Cleland in as president next year. I hope, for the good of the Association, and for the sake of good feeling, he will take the first vice-presidency now, and shake hands and work hand in hand with all of us for the interests of the Association.

Mr. Cleland came forward and shook hands with the president elect amid cheers.

Mr. Casswell expressed his regret on account of the absence of Mr. Ballantyne, and asked for a standing vote of thanks to him as retiring president, which was responded to amidst cheers.

THE DAIRY COW.

Mr. Hoard followed with an address on "The Dairy Cow," for a report of which see the proceedings of the Eastern Ontario Convention.

Mr. Hoard asked if any person wished to put questions.

The question was asked "How can we best cure milk fever when the cow is on good grass."

Mr. Hoard.—The best and most practical way is to have the cow calve in September. (Laughter). You may think that is humorous, but I want to say that I have found from actual experience that this is the case. I suppose 80 per cent. of your cows calve during April and June, but when we find a case where the cow calves in September, the same tendency to milk fever does not exist as if she had calved in the spring. There are two reasons for this. When the cow calves early in spring on grass, everything tends to increase the formation of the milk. The cow may have some chill or take a cold, the night temperature may go down, she is in a pretty ticklish condition, and as a consequence you have a case of milk fever. If you would guard against milk fever, for about three or four weeks previous to the time of parturition commence to feed such food as will produce a fairly lax condition of the bowels. I never cured a case of milk fever, but I have prevented a hundred that I know of. I despair of ever curing a cow that is stricken with milk fever. Hundreds of men tell me they have cured it, but I look out for the condition of the bowels. In the second place, if a cow calves in June I put her in the stable, and for 4 or 6 days after only let her have a moderate amount of food, and I always let the calf draw from her and milk her. I never milk clean at the first milking, because if you do it is calculated to produce a chill. That may seem curious but it is so. There are certain urinary diseases which have their origin in different circumstances which I could explain to you, and why cannot we treat these the same as doctors do in matters of obstetrics? In a case of milk fever a careful and kind treatment should be adopted which will produce an open condition of the bowels, and when the time of parturition comes, give her excellent housing, and do not let her have a full supply of food. Do not increase this function of giving milk; nature will do more than you want any way, and do not milk the cow clean until about the fourth or fifth time. Let the calf have access to her and see that she is made quiet and not disturbed. Let the calf have access four or five times.

Q.—What food would you give her?

Mr. HOARD.—Warm drink frequently and a light feed of grass, if it is in June. Cut some grass for her.

Q.—What food would you give in the winter?

Mr. HOARD.—I do not change the food of my cows except to feed them rather more lightly. Whatever ration I am giving, I increase when it becomes necessary to do so, and I get up some ration of bran or grain and so forth.

Q.—Do you recommend drawing the milk before calving?

Mr. HOARD.—If it becomes necessary.

Q.—Do you think it prevents milk fever.

Mr. HOARD.—No, but I think it prevents "garget." If you take a cow with a thick fleshy udder you often find a tendency towards "garget."

Q.—In the case of the retention of the placenta, what is the best practice?

Mr. HOARD.—The best practice is hand and arm.

Q.—Can that be safely attended to by an ordinary dairyman?

Mr. HOARD.—It is perfectly safe. All that needs to be done is to sit down and study it. I learned how to do it without the aid of a veterinary surgeon. It can easily be done by any man if he has "gumption" enough. The same treatment that I mentioned to you with regard to milk fever will almost invariably prevent this trouble as well.

Mr. Cheesman put a question with reference to the judging of cattle. He said "I do not object to a man having ideas of his own if he has discernment enough to put them in practice. With reference to the marks you have given us, say the jointure between spine and head, would you say that its absence in certain animals was an indication of weakness, if other marks were present, such as those approved of by Jersey and Guernsey breeders?

Mr. HOARD.—I would; I would say that it indicated that every other part of the work was well done, and that vital point—the vital point—was left unfinished. You sometimes see cows extremely weak there, and they are always failures, so far as I have seen.

After a paper by Rev. W. F. Clarke on Dairy Literature, the Convention adjourned for the day. The evening was occupied in attending a very successful banquet given to the officers and members of the Association by the citizens of Listowel.

FRIDAY MORNING SESSION.

The PRESIDENT, after calling the Convention to order Friday morning, introduced Mr. W. A. MacDonald, of London, to deliver an address on the testing of milk. He stated that Mr. MacDonald was not on the programme, but in the absence of another gentleman whom they had expected, he would ask Mr. MacDonald to take his place.

TESTING MILK

Mr. MACDONALD.—When first asked to make a few remarks, I wondered whether I should address cheese makers, cheese buyers and sellers, or farmers. When I came to think the matter over, I found all these interests were identical, and so if I address one I address all, with this exception, that I do not intend to benefit farmers who adulterate their milk. All other parties are concerned in what I have to say. I have a large dairy laboratory, and for the last four years have experimented a great deal in testing milk and

cream, and working in other departments of dairying. When I first established the business, having become connected with a dairy depot, I wanted to ascertain what was the best instrument for testing milk and cream, and on examining the matter I found that the best systems were not known in Canada. I wrote to a German laboratory, and found they had a system of milk-testing on a scientific basis, and was much surprised to find that the systems they had there were utterly unknown in Canada. Therefore I had to send to Germany for the necessary instruments. Nearly all the instruments used there I have tested, and find them work very satisfactory. After I had been conducting my experiments for some time, it leaked out that I had the necessary facilities for testing milk, and so I was requested to test milk at some of the cheese factories in the vicinity of London, and see what adulterations were going on. Having done this, I felt alarmed at the amount of adulteration that was taking place, and then I announced through the columns of the *Advocate* that I would go to any cheese factory and test the milk at my own expense, with the exception that parties asking me to come should pay my railway fare. The result was that I received some forty or fifty invitations to test milk at factories on those conditions, but unfortunately I was able to accept only about fifteen, embracing territory from Logan in the west to Peterborough in the east. As far as I learned the parties were well satisfied with the results, although I was not myself, because I had not time to make the tests I considered necessary with some of the milk. I had to make two separate tests of each sample as fast as it was delivered to the factories. You will be surprised to learn that such a thing could be done. As fast as it was delivered I made two separate tests, the one to check the other. As time was precious, I could not remain afterwards to make further tests in cases of suspected milk. Some of the samples I had to mark "suspicious" because I had not time or had not the instruments with me to pronounce upon them fully. From this you will see that there is an interest taken in the milk-testing business. Some of those applications for testing milk came from officers of cheese factories, some from cheese makers themselves; I found they all took great interest in the test, and I spared no pains in explaining the system on which it was done. Some of them said the instructions they received were alone worth the money they paid.

As you heard yesterday, and as probably you all know, practically the three constituents of milk are butter-fat, caseine, and milk sugar. Of course albumen, protein, and salts are present in small quantities, but are not taken into consideration in testing milk. Now, experimenters all over the world have established certain principles to work on. It is found that no one test is sufficient to condemn a sample of milk unless it is very badly adulterated. If it is badly adulterated using the lactometer or almost any system will show that, and some are expert enough to find it out without instruments at all. Some people have not conscience enough to adulterate to that extent. A large number of patrons adulterate their milk just lightly enough to make it profitable, and so you can hardly tell whether it is adulterated or not. Others, as I have found, adulterate to the extent of thirty per cent. of water. It would be almost as undesirable to pronounce on a sample of milk from one test, as to judge a cow from one point. A number of things are to be taken into consideration, and an expert must know all those things and the varions conditions which affect his instruments. The lactometer has been chiefly used, and the result is that every cheese maker has a lactometer. Well, now, I found in testing lactometers that not one I came in contact with was correct; I found them varying from two to three degrees up to ten or twelve degrees astray from the correct specific gravity. They test by specific gravity. What is meant is this, you take a certain bulk of water weighing say 1,000 lbs., and the same bulk of milk will weigh 1,031 lbs., showing that milk is heavier than water. The average specific gravity of milk is said to be 1,031, or "31." Now if all milks were 31 degrees of specific gravity, there would be no trouble at all, provided the lactometer was accurate. But such is not the case, and that gives rise to the necessity for milk standards. Now a milk standard suitable to one country may not be suitable to another, because herds differ, and climates, and the produce of the soil, and all those thngs which affect the quality of the milk differ. As we have no standard in this country, I was under the necessity of adopting the English or European standard, and I found some discrepancy there. As a rule in England the

milk is supposed to be adulterated if the specific gravity varies more than between 30 and 33; that is pure milk has a variation of that specific gravity. On the continent they give a little more latitude; they consider it unadulterated if it varies between 29 and 33. However, what all know, is that in a large majority of cases the specific gravity does vary from 30 to 33, and in a comparatively smaller number of cases milk will vary from 29 to 34, and even in extreme cases from 28 to 35, but that would be from individual cows. The greater number of cows you have in a herd the less variation there will be in specific gravity, so in testing milk by specific gravity it is important to know the number of cows in a herd. Another objection to the lactometer used in this country is that it does not give the specific gravity at all. That is, you plunge the lactometer into the milk, and there is the milk at 100. Many cheese makers think that unless the lactometer floats at 100, there is something wrong with the milk. Now, that is misleading, because even if the lactometer is correct, it may float between 100 and 114, and still the milk may be pure.

Mr. Derbyshire—Have you brought the milk to the same temperature?

Mr. MacDonald—Of course; the way cheese makers do here is to bring the milk to the same temperature, that is 60°.

Mr. Derbyshire—It is according to the gradation of the lactometer. They bring it to whatever it is graded at.

Mr. MacDonald—The most I came across were 60°. You know all over Europe the centigrade thermometer is used, and in this country it is used for scientific purposes. The temperature to which all samples are brought when tested is 15° centigrade, which corresponds with 60° or 59° Fahrenheit. The difference is very little; probably 60° is sufficient for practical purposes. Now, it is necessary to bring the milk to this temperature because the specific gravity varies according to the temperature, owing to the contraction by cold and the expansion by heat, so you must have a uniform temperature. The milk being expanded by heat, the lactometer will sink down, while if it is contracted by cold the lactometer is more buoyant; but I have often found cheese makers taking the specific gravity of milk without reference to the temperature at all. Now, a great hindrance to the use of the lactometer test is that it is unscientific in the beginning, that is with regard to its gradation; although the numbering is correct on the lactometers used here, they do not show the degrees by specific gravity. That is, take 100, which is supposed to be pure milk; according to your lactometers it corresponds to 29° of actual specific gravity. Now, dividing 29 into 100 it gives you 3.45; so you have to multiply and divide by that number to convert the one into the other. I have been asked to supply lactometers, but I am not in that business; at any rate, I have refused to sell these instruments, because if people did not use them right I would be pronounced a fraud. You must not jump at the conclusion by any means that every man can test milk. The instruments are all right if handled right.

A Member—How would you test for cream alone, supposing there was no water?

Mr. MacDonald—I will come to that in a little while. If the specific gravity varies between those limits it is pronounced pure, but that is not strictly correct, because the fat, as you all know, is lighter than the rest of the milk, and so it rises and we get cream. Take a bulk of water weighing, say 1,000 pounds, and the same bulk of cream will weigh 993 pounds. This being the case you will understand that if you remove some of the fat and put water into the milk you have the same specific gravity, because water is lighter than milk, water being 1,000 and milk 1,031. Now, these things must be corrected by some instrument for taking the percentage of butter-fat in the milk; hence it is necessary to make at least two tests, one of the specific gravity and one of the butter-fat. Now, what instrument are we to use for that? The lactometer is one instrument used, and for the others there are a large number of instruments, some more correct than others and some with which you can do the work more quickly. Now, it having been decided what instrument you want for testing the fat, I must ascertain what your work is. If it is in a cheese factory where you have to test the milk of seventy or eighty patrons, it will not do to have an expensive system, although it is very correct, because

it would take too long and you might have to employ a person specially. Unless you have a system which is tolerably accurate and which will do your work quickly, it is of no practical use. Now, for taking the percentage of butter-fat quickly the lactoscope is used. You can make the test quickly but it is not very accurate. Chemical analysis is the test for accuracy, and when testing by the lactoscope you must analyze it with this instrument and compare it with the test by chemical analysis and see how correct it is. In making tests with the lactoscope I find the averages generally correct. Take a herd of twelve or twenty animals, and take the averge with the lactoscope and it will be almost as correct as chemical analysis ; at any rate, it will be near enough for practical purposes. If you take the milk of one cow or one herd and make one test you are apt to go pretty far astray. Probably in 75 or 80 cases the percentage would not differ more than one-quarter of one per cent., but in a few other cases it may vary one-half or three-fourths of one per cent., while the greatest variation I have ever seen with the lactoscope was one and three-quarters per cent. ; but that would be in extraordinary cases. A few extreme cases may occur ; in testing eighty samples there might be some chance of your being one per cent. astray, and probably in making 1,000 tests you may go 1½ per cent. astray, so you must be very cautious in pronouncing upon tests made by the lactoscope. However, the lactoscope is useful in its way. When a patron is delivering the morning's milk separate from the evening's milk you may call the test sufficiently accurate for all practical purposes, because if you test the evening sample and the morning sample by the lactoscope, the variation will be very slight, as will also be the variation of the specific gravity. Now when the messes of milk are delivered separately you have no trouble with these instruments, the lactoscope and the lactometer, because you can compare the morning's with the evening's milk, and you can almost always rely on that. When the messes are mixed the test is not so reliable, and adulteration may be going on without your knowing it. For instance, if the original milk had 4 per cent. of fat, you might put a little water in it, or add a little skimmed milk and reduce it to three per cent., which is the ordinary limit. In the milk from a herd of cows there is hardly ever less than 3 per cent. of butter fat, and the average is about 3½, but I have found a variation in factories where I have made tests from 2½ to 4½ per cent., showing us plainly that if a farmer has milk which contains 4 or 5 per cent. of fat he can put in some water and add some skimmed milk as well, provided the two messes are mixed together. Speaking of the temperature in taking the specific gravity I will refer to that now. You know how difficult it is, especially in hot weather, when the milk comes in at 70° or 80° and perhaps water is at 50° or 60°, to reduce the temperature of the milk to 60° in order to take the specific gravity. Yet cheese makers knowing that the temperature should be 60 will spend a long time in trying to reduce it to that. Now, in Europe they know better. They save all that trouble. I will explain how that is. If you recollect this fact, you will have no difficulty in remembering the explanation. Take the specific gravity of milk at any given temperature and then at any other given temperature, and you will find that the variation in the specific gravity is tolerably constant, that is if you take the specific gravity at any given temperature you can calculate from that what it would be at any other temperature, say at 60°, because the variation in ordinary temperatures is pretty uniform, though when you get out of ordinary temperatures it is not quite so uniform. You can calculate from the specific gravity at any given temperature what it would be at 60° in this manner. (I am laboring under a difficulty here because I am accustomed to the centigrade thermometer and the metric system of grammes and metres and kilogrammes, and cannot convert them quickly into the ordinary standards, whereas if I had paper I could give it to you in our own measure.) It is calculated in this way : every five degrees variation in temperature makes one degree difference in specific gravity on the lactometer. You will know which way it goes, because the warmer the milk the lighter it is, and the cooler the heavier. Now 5° centigrade is equal to 9° Fahrenheit, so that every 9° variation from 60° temperature will make a difference of one degree on the lactometer. Now we can get a simpler way of arriving at the result than by going to the trouble of making this calculation in every case, which it requires an expert in figures to do. Tables have been prepared so that when you take the specific

gravity of any temperature all you have to do is to look at the table posted on the wall and see what the specific gravity would be if the temperature were reduced or increased to 60°. That is an illustration of the difference between the scientific and the practical methods. These tables, remember, are not calculated on this principle ; they are compiled from actual tests, so they are more correct than if actually calculated. These tables are absolutely correct, I forget in which factory it was—I always tested the thermometers and lactometers in all factories to see how correct they were—I told the cheese maker to test a sample of milk in his own way. He brought out a lactometer and went to the tap and drew a sample of milk. He had pretty cool water and reduced the milk to 60°, the whole operation taking up about half an hour. In that time I made 40 or 50 tests of the fat and specific gravity, double tests of each sample, while he was making one test of the specific gravity alone. I might also add that in cheese factories where they pretend to test, they should always have an accurate lactometer in connection with the lactoscope, because without the lactoscope or some such instrument you cannot tell whether the milk is skimmed or watered. You require to have instruments to come to the conclusion whether the milk is skimmed or watered, though perhaps it is a matter of little practical importance which is being done. However, it would be satisfactory to know which way the adulteration was. Sometimes the adulteration is by putting in skimmed milk, but there are many tricks and I do not think I should teach them. I may just add here that the same principles are involved in the testing of cream as of milk, because cream is nothing but milk adulterated with butter fat. You may regard cream as milk with a large percentage of fat in it ; the same principle is involved and the same conclusions can be arrived at in both cases, very often with the same instruments.

Now, what I consider to be the practical outcome of my remarks is to enable you to come to the concluson whether it would be practicable for you to conduct these experiments on an extensive scale, and that depends on the expense. I will give you figures as to the expense, and you can come to the conclusion whether it would be practicable to test milk for adulteration in this way, and then to go a step further, and having tested the milk, pay for it according to quality. That is universally done in Europe, and the quality of it is the butter fat. I have heard the objection raised that butter fat is not the right standard for cheese though it might do for butter. That I that I think is erroneous, and here I come in contact with Mr. Hoard. I see he says in his paper that there are milk cows, butter cows and cheese cows. Now if you test the milk and pay for it according to quality, it destroys altogether any distinction between butter and cheese cows and milk cows, because the only difference between one quality of milk and another is the quantity of water in it ; you cannot judge to any extent the relation between the different kinds of solid matter. The percentage of water in milk may vary from 83 to 90 per cent.—that is, water from the cow, not from the pump. Now the other 12 or 13 per cent is solid matter, consisting of butter fat and casein chiefly. It has been ascertained by numerous experiments that the relation between the butter fat and the other solids is pretty constant ; that is if you have a cow giving milk rich in butter fat, that same milk will also be rich in cheesy matter. Of course that would elevate the specific gravity. Now, the specific gravity of rich milk instead of being 33, might be 34 or 35. It may be said that a large percentage of butter fat, which is lighter than milk, should reduce the specific gravity, but you cannot increase the butter fat without increasing the total solids, and although the specific gravity of butter fat is 93, that of the whole solids is 1.06. Sometimes you get a sample of milk which is rich in butter fat and poor in casein. That generally arises from the fact that the sample is not a correct one. You may get an incorrect sample in two ways. If you take milk from which some of the cream has been removed you will not get a correct sample, and even from the cow you cannot get a fair sample. You all know cows that withhold the strippings, and that destroys the relation between the butter fat and casein ; that milk would be pronounced skimmed, as the effect is exactly the same as skimming the milk. So if this relation does not exist it is generally on account of the fact that you have not got a correct sample. Now if you paid for milk according to quality, it would have this effect, that a farmer who frightened his cows and who was paid by butter fat instead of the total solids, would be punished for his

brutality, and he would deserve to be so punished. However, if it is thought better to use the total solids as the standard for cheese making, it can be done without any extra labor, because if you know the percentage of butter fat in milk and the specific gravity, you can calculate the total solids, or instead of calculating you can ascertain by tables which are now being prepared for that purpose. Now that is an important thing in testing milk, because if you know the total solids and butter fat, you can often get the specific gravity without testing it, or if you know the total solids and specific gravity, you can calculate the butter fat. This is one of the chief things upon which tests are conducted. The number of applications I have received to go and make tests, and the willingness of patrons to pay three, or four, or six, or nine dollars for my expenses show that there is a considerable demand amongst cheese makers, cheese buyers, and honest farmers to have their milk tested. When at Peterborough the cheese maker told me he did not consider they would be out of pocket after taking into consideration the instructions received and the tests which were made.

The only thing now is to know the expense of the test and to know to what extent it can be conducted. I will proceed to show what other instruments I have for taking the fat instead of the lactoscope. Of course I use the lactoscope for rough work, and can tell by it whether milk is skimmed or watered. You all know about the chemical analysis test; that is a different question though more accurate. It takes over half a day to make that analysis.

Mr. CHEESMAN.—Two hours.

Mr. MACDONALD.—I have seen a man at it for half a day. The next thing is to get other instruments which will give as near as possible the same result as chemical analysis, and produce results of a practical kind. I will not go over all the instruments for this purpose as it would take too long. Dairy experimenters have heard about the lactobutyrometer. It has been used to some extent, but has only recently been brought to some degree of perfection. Until lately it was often less accurate than the lactoscope, but recent investigators have succeeded in getting it down to a pretty fine point, and it will now compare in accuracy with chemical analysis. It has never been known to vary from chemical analysis more than one-fifth of one per cent. Tables have been prepared, and by comparison with these tables you can get the percentage of butter fat. The tables do not make allowance for this one-fifth of one per cent., but since then it has been ascertained how an expert may know when this variation will occur, so you may be sure you will not vary more than one-tenth of one per cent. from chemical analysis. The next question is, How long does it take? That depends. The instrument consists of a tube a little thicker than my finger. These tubes vary in size; the one I have is about a foot in length. You put in 10 cubic centimetres of milk and the same quantity of ether; shake it up and it dissolves the fat; put in a smaller quantity of alcohol, shake again, and the fat rises to the top and the casein sinks to the bottom. The length of time the test takes depends on the number of tubes, and the number of tubes you can handle depends on the size of your hand. I can take six tubes in each hand; they have to be shaken for some time and in that way you can make twelve tests at once, which lessens the work considerably. The tubes have to be set in a warm water bath, and of course while they are standing there you need not be watching them. I have a very good instrument; it is useful for carrying round and includes a water bath in which you can put three tubes at once. If you cannot get hot water methylated spirits will do instead. Taking it on the whole, it may take from five to ten minutes to make each test, according to the degree of expertness, so if you make a test in seven or eight minutes all the time is not required. With regard to expense, I have figured the thing out, and it costs about two cents for each test for ether and alcohol. Some people are apt to exceed this if they take some of the alcohol to suppress a pain in the stomach and charge it against the milk. In this way the test will cost a little more.

A MEMBER—Is that test used in the old country? I saw that it was used in Glasgow by the public analyst about a couple of years ago.

Mr. MACDONALD.—Yes, it is more than two years since it was brought to perfection. It is used chiefly in Germany.

I was going to speak of milk standards in Canada, of the evidence required in a court of law for prosecuting people who adulterate milk, and about getting the proper samples for testing it. I also intended to say something about inspectors and the education they require, and was going to wind up by touching on the necessity of producing a good quality of milk, but having scattered my remarks over so much ground, I find I have not time to enter into these subjects.

Mr. DERBYSHIRE.—Few cheese makers have the time to go into experiments and testing with the same ability Mr. MacDonald has. He is a newspaper man, and they are the greatest men in the world. I have taken the *Farmer's Advocate* for years, and there is no paper I appreciate more. There is a great deal of good in it, and I like the articles written by Mr. MacDonald. I wish to draw attention to one point, and that is, you do not need any of those high-flown instruments to test the milk in the factory. What you want is a lactometer which has been tested. I sell lactometers, and I test them before I send them out. Mr. Pearce, of London, sells them. In five minutes I can get a girl to test milk correctly. At the same time if you have not the proper time to use the lactometer, get a few test tubes and a little square box and take a sample of each man's milk from the can and set it up. If three-fourths or seven-eighths of an inch of cream rises in the tube you may consider the milk all right, but if there is only the thickness of a knife-blade of cream, as you often see, you may begin to think there is something wrong, and you can go further into the test. Do not get this thing mixed; do not let the farmer believe that the cheese maker cannot test his milk correctly. He can do it simply, cautiously, but well. If we wanted to test the solids we would send for Mr. MacDonald, who dealt very elaborately with that subject. Do not be alarmed; you can test it in a simplier way.

Mr. MACDONALD.—That test is a fraud.

Mr. DERBYSHIRE.—Do not say that; I know better, I have tested it.

Mr. T. J. DILLON (Bluevale).—Was glad to hear Mr. Derbyshire speak on behalf of the cheese makers. Cheese makers had been professing to test milk now for a number of years, and it was a queer thing if their methods were altogether astray. It was his practice when the milk came in to take the temperature of each man's milk, note the reading of the lactometer, fill the cream gauge tubes, and mark all the results in separate columns of the book which he kept. The milk should stand at 100 by the lactometer, and if it varied from that, he referred to the cream gauges and they would show whether or not the cream had been taken off. In this way any dishonesty could soon be detected, as one man's milk should on an average be as good as another's.

Mr. J. W. MONTGOMERY.—If you take a sample of a man's milk from the can as it comes in and put it in one of these percentage glasses and see that it has 9 per cent. of cream one morning; the next morning you take a sample in the same way and it shows 18 per cent.; next day the man sees you doing this and you laugh him off. Next day it shows 11 per cent., and the next 17 per cent.; if this happens you may think there is something wrong.

Mr. DERBYSHIRE.—You may consider he is skimming his milk, and you can put that right down in the book.

Mr. CLELAND.—The last speaker caught me in the position that I must either study chemistry or get out of the cheese business. That is he had such a roundabout way and and so many "ifs" and "ands" that I got the impression we cannot test at all. I am under the impression with Mr. Derbyshire that the lactometer and cream gauge are perfectly satisfactory and reliable for all practical purposes. I have been impressed with that for years, and I have been in the business a long while and have never seen it fail. True there may be little variations, and I would just give an instance. For example, you are working with a lactometer which has been tested and you find the milk brought in by a certain individual shows a certain amount of water—so much per cent. You go on testing and it still shows the same percentage of water. You make up your mind the

thing is entirely wrong, and to remedy it you send a committee to the farmer for the purpose of getting a sample of the milk. You get a sample, bring it back, and test it, with exactly the same instrument and under the same conditions as before, and you find from that test that the milk is pure. I conceive that this is evidence sufficient to show that the milk has been tampered with, and if the lacometer should vary a few degrees either way, it does not make any difference because the same lactometer which shows the difference shows that it is correct. Mark you, the lactometer and cream gauge are the only safeguards we have in this business. If you destroy their usefulness, the first thing you know you will destroy the dairy interest, which is one of the most important in this part of the country.

PROTECTIVE LEGISLATION.

Mr. Cleland reported from the committee appointed to draft an act for the protection of butter and cheese manufacturers. He said that the previous Act was one passed by the Ontario Legislature, and when cases came up it was thrown in our teeth that the Local Legislature had no business to pass such an Act, that it was beyond their jurisdiction, and you could not convict. There were many convictions made under the Act, and some were quashed not on the merits of the case only, but on some technicality. I have never known one to be quashed on its merits alone. It was always held up that the Act was *ultra vires*. There were several other things also which were not quite right, for example, the adulteration of milk was held to be a criminal offence, and therefore punishable by fine or imprisonment. Then it was not made plain that one was held responsible for wife or servants, and therefore you might punish the wrong party. Again there was a difficulty in sending on a committee for the purpose of testing the milk under the old law. In one case the committee was sent to get a sample of milk from a man who was suspected, and who was found out and punished, but he turned round and punished them for trespass.

The draft Act was then read by the speaker.

Mr. Derbyshire moved that "The Act as prepared be referred to the Board of Directors of the Western Dairymen's Association to take such steps in the matter as may be necessary." If they wanted to revise it they could do so, and they could send it to the Dominion Parliament if they chose.

Mr. Montgomery seconded the motion.

A member suggested that the Act should be printed and a copy sent to each cheese maker before it was passed at all.

Mr. Derbyshire.—Your officers are men of great wisdom and experience, I know they will do what is best.

The President.—Would it not be well to refer it to both the Western and Eastern Boards?

Mr. Derbyshire.—We are perfectly satisfied to leave it to you people. We will give you whatever aid is possible in perfecting the law.

Mr. Cleland.—This is simply a draft, and if anyone is prepared to make a suggestion it will be gladly received before the Act is placed before the House of Commons or any action is taken.

The motion was carried.

Mr. Hunter asked if there was any law by which a patron beginning to send milk to a factory could be compelled to continue sending it for the whole of the season unless he had the permission of the manager to withhold it.

Mr. Derbyshire.—Of course there is no law to compel him to do so. It is simply a matter between the proprietors of the factory and the patrons.

Mr. Hoard.—We contract.

Mr. DERBYSHIRE.—Yes, many have printed contracts; we have in our factories. We notify everybody at our annual meeting and if they do not sign it they are bound by it just as much as if they had signed it, but there is no law except the bargain you make in your own particular factory. We do not want any other law. You can arrange this bargain and everything will be all correct. Make a proper bargain, have everything all right about the factory, make a good article and sell it for the highest price.

ENSILAGE.

Mr. W. D. HOARD then read a paper on Ensilage, which will be found in the record of the proceedings of the Eastern Dairymen's Association. The following discussion ensued:

QUESTION.—How do you try the heat of the pit?

Mr. HOARD.—A good way is to dig down and put in a thermometer for a little while.

QUESTION.—Is the time you have mentioned sufficient to allow the corn to heat?

Mr. HOARD.—Yes, if it is the right kind of corn. The common Dent corn contains so little saccharine matter that it will not heat enough to kill the germs of ferment.

QUESTION.—Would a pit in the bay of the barn running into the bottom or basement where the stables are answer the purpose if an opening were made below?

Mr. HOARD.—No; it does not answer to open it at the bottom; by doing so you will spoil a lot of ensilage.

QUESTION.—Is it necessary to have a double door of tar paper?

Mr. HOARD.—No; a single door is sufficient.

QUESTION.—Is the quality of ensilage kept over to another summer inferior?

Mr. HOARD.—No; it will keep for almost any length of time after this curing process.

Mr. DERBYSHIRE.—The difference between sweet and sour ensilage is that the sweet is fit for food, while with the old ensilage your wife would not let you in the house after using it until you had a bath.

The PRESIDENT.—Under the old system it was a great rush with a lot of men putting it all in one pit and a big force treading it down. You see that is all wrong.

Mr. HUNTER.—You spoke of shocking corn at the right time. If corn is put in immediately after it is cut would it be injured?

Mr. HOARD.—No, I do not think so.

Mr. CHEESSMAN.—But it makes it more difficult to raise the temperature to 120° or 140°?

Mr. HOARD.—Yes.

QUESTION.—In levelling this off inside do you stand on the ensilage?

Mr. HOARD.—Yes, we travel all over it.

Mr. JAMES ELLIOTT (Turnberry).—In this part of the country we have sowed this southern corn, and though it grows well it does not come to anything like as much as you say.

Mr. HOARD.—One mistake which is often made is that we do not plant it early enough in the spring, and do not select a warm, dry soil. Then we are too much afraid of spring frosts, but I would rather run chances of three frosts in the spring than one in the fall.

Mr. ELLIOTT.—We have summer frosts sometimes.

Mr. HOARD.—Well, that is something we cannot provide against. If I was afraid a frost was coming to spoil my corn I would cut it down right away. I would save what I could.

Mr. HUNTER.—Is it necessary to put a little earth up to the corn with a horse-hoe?

Mr. HOARD.—No, never; we use perfectly level culture.

QUESTION.—What kind of a drag do you use in dragging?

Mr. HOARD.—A slanting-toothed drag; one that slants if you hitch on one end; the front end is straight.

QUESTION.—How do you cut it?

Mr. HOARD.—The very tall corn you can cut with a reaper, but for some of the shorter corn you want an ordinary corn-cutter.

QUESTION.—Why not cut it with the binder?

Mr. HOARD.—It is too tall. You want to sow so as to get a mature, good ear. If you sow close together with the idea of getting it fine you get a lot of slush and water. I buy a good deal of fodder and a good deal of hay. I keep none but thoroughbred cattle, and when I can buy corn fodder for $5 a ton I prefer it ton for ton to the best timothy hay any man can bring me. Now, why do we go on feeding a costly ration when I have raised on an acre of land from 8 to 10 tons of cured corn fodder? When that can be done I do not see why we prefer to go on raising 1½ tons of timothy hay.

QUESTION.—In feeding dry corn fodder yourself do you run it through a cutter?

Mr. HOARD.—Yes, the feed-cutter is a valuable aid. Prof. Henry found by experiment that it saved from 15 to 40 per cent. on the amount of feed it took to make a pound of butter.

Mr. ELLIOTT.—For feeding in August and September would you recommend planting it in that way?

Mr. HOARD.—Yes; if I was feeding for that portion of the year I would not feed this heavy corn, but a finer stock—sweet corn, but not so rank.

QUESTION.—Have you tried ensilage with horses?

Mr. HOARD.—I have not, but others I know of have used some with good success, though you should not change the horse's feed too suddenly. Where you take it slowly and carefully, a horse eats it splendidly, and thrives on it. Pigs and sheep also thrive on it.

QUESTION.—Does a dairy cow require as much water with ensilage as an ordinary winter feed?

Mr. HOARD.—No, it is more succulent, and you do not require so much water. Three tons of ensilage are equal to a ton of hay by actual experiment: still, when you dry three tons of ensilage down to the condition of dry hay, you have only 900 lbs., while a ton of good hay when dry contains 1,800 lbs. of solid matter. We cannot explain the mystery that 900 lbs. of solids when in a state of succulence like ensilage has a feeding value of 1,800 lbs. of good hay. One theory is that it is in the ease of digestion.

QUESTION.—What is the cost of a silo?

Mr. HOARD.—About $1 a ton of capacity.

Mr. CHEESMAN.—Does the feeding of ensilage have an effect on the color of the butter?

Mr. HOARD.—I am receiving reports from hundreds of siloists, and I shall publish some time full drawings of how to build a silo. A word as to its effect upon cattle. You know the color in the butter comes from the chlorophyll in the feed. The basis of yellow is green, and when the cow is eating green feed, she gives yellow butter. If you furnish green feed, you will always get your return in the color of the butter, and ensilage has that effect. We notice that everywhere. You know how the color fades out of a cow in winter, but ensilage will keep it up.

CHEESE FAIRS.

Mr. R. Ferguson (Listowel) then spoke on the subject of Cheese Fairs. He said: My subject is one of considerable importance, inasmuch as the object of associations of this kind is to make as much as possible of the labor in connection with dairying. You may have a silo, a first-class dairy, and give every facility for making first-class cheese; you may have proper men for the purpose of preparing it, and a proper building for curing it, but until the marketing has been completed, you have not realized the full extent of your labor. It may sometimes occur that after cheese is brought to market for sale, all the money in it has been exhausted. A great deal depends on the management of the market as to whether or not you realize the fullest extent of your labor. The question arises, Have we arrived at perfection in the way of marketing and sales, or are we still in the beginning of things? I think it will be readily conceded by those present who have experience in the matter, that on looking on the industry as a whole, while a great deal has been done in the way of conducting our sales, we have not arrived at that stage when perhaps the largest return is realized. The question is one of difficulty in this and in no other parts of the country. We have what may be called an easy way or system of buying and selling. I recognize the right of a man to buy in the cheapest and sell in the dearest market. I believe in the principle of free trade as applied to all things, but I know there are many defects in the present system, and if I may be allowed to occupy a few minutes in discussing the question, I wish to point out a few of those defects. You are aware that associations have been formed throughout the province for mutual benefit, but I do not think the advantages derived by their members are worth the investment. Are they worth the investment at the present time? If they are not giving the patrons the advantages they could give, the question we have to discuss to-day is, What means can we take to conduct our fairs so that patrons will be satisfied and justice done to buyer and seller alike? I think our mistakes at present are these: We have an Association composed of so many members, and a place of meeting where we assemble every two weeks, and each factory appoints one salesman with full power to make a sale. On the arrival of the salesmen the cheese is placed on a bulletin, with the name of the factory, the number of boxes offered, date of make, kind of cheese, etc., and the members of this Association are supposed to be bound to act together. We have a code of regulations principally dealing with the matter of marking sales, but so far as our Association here is concerned, and I suppose it is like many others, the code is not perfect. At first difficulties may not crop up, but they do afterwards, and it is necessary to have regulations to meet them. In this society of ours I believe we have as honorable a body of men both among salesmen and buyers as you will find anywhere, but no matter how honorable men may be misunderstandings will arise, and we require regulations and a code of laws by which after hearing the evidence on both sides to judge of the difficulty. We have a board of arbitration, and in the case of a dispute between buyer and seller the buyer chooses one member of the board, the seller another, and these two arbitrators choose a third. Evidence is heard on both sides and the decision of that body is final. The constitution and by-laws are not signed by members, so the members do not hold themselves bound by them. One provision is that these by-laws are supposed to be acted up to, and any violation may be punished after investigation by fine or expulsion. The difficulty is that any member coming under these by-laws without having signed them may not consider himself bound by them, and we have no redress against him. Like courtship, though things said at the time may not be considered of much weight, yet afterwards, if there is any dispute, every word becomes important. Buyers and sellers are coy at first, but in the evening when the train is about to leave they begin to come together. A young salesman complained that the present is not the proper method of selling, and though it may not be an exactly business-like way of doing things, still I do not know but what it is best for trade to take its own channels and cure its own defects. Cheese-selling is becoming an institution. It is not like selling a horse, because you are bound by the Association, and each salesman is anxious to get as good a price as his neighbor. There is the factor of local jealousy also, for if a salesman does not get as

good a price as his neighbor, the result is local jealousy arises, and the salesman often loses his reputation, for that year, at any rate. Salesmen are afraid to sell lest their neighbor should get a few cents more, and their reputation should be injured. I think cheese should be placed on the bulletin board something like wheat is done in the case of an auction sale, and as is done in some places in America, and instead of making a private bargain, each man comes forward and says: "I will give so much for the choice of so many cheese." The difficulty is that cheese is not all alike. We have some men who have fine cheese, and who are very particular in boxing and looking after it, and these men should be rewarded more than those slovenly people who put up their cheese in any careless way. If buyers and sellers were all present a buyer would come forward and say; "I will give 10½ or 11 cents for the choice of 500 boxes or 1,000 boxes." The seller, of course must be expected to have the refusal, either by taking the last bid or by refusing to take it. In an association people should be bound when once cheese is placed on the bulletin board to let it remain there. It should be compelled to stay there until a reasonable price is offered, or if the cheese has to wait over it must be brought back to that board and sold there and at no other place. That is the only way you can ever obtain justice for all parties concerned.

THE PRESIDENT.—Remember what my friend Ferguson has said. Nothing succeeds like success, and if the fair carried on as it has been in Listowel has not been a success I would like to know where it has. Do the best you can, but do not trammel salesmen by binding them up too tight and preventing business being done.

AUDITORS' REPORT.

The Secretary now read the Auditors' Report, which was adopted.

We, the Auditors appointed to audit the Treasurer's accounts for the year 1887, beg leave to report as follows:

The Treasurer's accounts have been duly examined, and we find in his hands vouchers for all payments made by him for the Association, and that he has over on hand the sum of $1,107.64, for which sum he produces one hundred dollars in cash and a cheque marked good for the balance, of $1,007.64. The accounts are as follows:

RECEIPTS.

By balance as per last audit	$129 56
" Government grant	1,500 00
" receipts of Convention	180 25
" proceeds bills payable	592 89
" " experimental cheese sold	294 00

DISBURSEMENTS.

To expenses of Convention	$343 25	
" " " board meetings	53 00	
" printing, stationery, etc	154 81	
" salaries	238 00	
" grants to agricultural exhibitions	200 00	
" bills payable	600 00	
" balance	1,107 64	
	$2,696 70	$2,696 70

All of which is respectfully submitted.

JOHN S. PEARCE,
Auditor.

Listowel, 12th January, 1888.

VOTES OF THANKS.

The Secretary moved a vote of thanks to Mr. Hoard, Rev. Mr. Clarke and other gentlemen from a distance for the valuable addresses they had given, the courtesy and good feeling manifested on their part and the kind expressions which had emanated from them with regard to the present meeting. He said they had provided a fund of information which he was sure would prove most useful to those present. The motion was seconded and carried unanimously.

Votes of thanks were also carried unanimously to the President for the able way he had conducted the meeting, and to Mr. Derbyshire.

The Convention then adjourned.

BINDING SECT. AUG 2 3 1967